



Using the GLOBE Visualization System

 THE GLOBE PROGRAM

A Worldwide Science and Education Program

Q

SIGN IN



20th Anniversary · 1995 – 2015

Featured

Anniversary Video Celebrates 20 Years of The GLOBE Program

Charles F. Bolden, Jr. of NASA and others discuss the impact of the GLOBE program.

View Globe Around the World

About

Join

Get Trained

Do GLOBE





GLOBE Data

Community

News & Events

Support

RECENT MEASUREMENTS

  **Tantrarak School** , Thailand, Clouds 1-Day, Measured at: 2015-04-23  

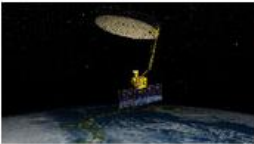
Enter Data

Visualize Data


Welcome

Latest News and Events


NEWS EVENTS CAMPAIGNS



Soil Moisture Active Passive (SMAP) Satellite Mission
The NASA Soil Moisture Active Passive (SMAP) Mission provides measurements of soil moisture and freeze/thaw state.







The Global Precipitation Measurement (GPM) Satellite Mission
The Global Precipitation Measurement (GPM) Satellite will help us understand natural disasters, water resources, weather & climate modeling, public health, and more




CloudSat Satellite Mission

GLOBE ON SOCIAL






Participants of the GLOBE Train-the-Trainer Workshop in Rapid City, South Dakota, USA celebrate Earth Day by cleaning up a nearby stream. #GLOBEProgram
10 hours ago



Let us eat cake! Thanks for celebrating The GLOBE Program's 20th Anniversary with us! #GLOBEProgram #NASA #NSF #NOAA
18 hours ago



Directly from Zagreb, Croatia - "School For Nurses Visits GLOBE"

Hold the mouse over the **GLOBE Data** menu, then click on **Visualize and Retrieve Data**. Or, use the quick link shown below.

The screenshot shows the homepage of THE GLOBE PROGRAM, a Worldwide Science and Education Program. The header includes the logo, program name, and a search bar. A large banner celebrates the 20th Anniversary (1995-2015). A featured section highlights a 20th Anniversary video. The main navigation bar includes links for About, Join, Get Trained, Do GLOBE, GLOBE Data, Community, News & Events, and Support. The GLOBE Data dropdown menu is open, showing options for Data Entry, Visualize and Retrieve Data, and Science Honor Roll. A red arrow points from the instruction text to the 'Visualize and Retrieve Data' option. Another red arrow points from the instruction text to a 'View Globe Around the World' button. Below the navigation bar, there are sections for Recent Measurements (showing Tantrarak School), Latest News and Events (with articles on SMAP and GPM satellite missions), and GLOBE ON SOCIAL (with tweets about a workshop and anniversary cake). A 'Welcome' sidebar is visible on the left. At the bottom, a footer link points to the data visualization page, and a 'CloudSat Satellite Mission' link is also present.

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Tantrarak School, Thailand, Clouds 1-D

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Directly from Zagreb, Croatia -

www.globe.gov/globe-data/visualize-and-retrieve-data CloudSat Satellite Mission

Click on [Enter the Visualization System](#) link. This page also contains a link to this tutorial.

 THE GLOBE PROGRAM

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[GLOBE Data > Visualize and Retrieve Data](#)

[Home](#)

[GLOBE Data](#)

[Data Entry](#)

[Visualize and Retrieve Data](#)

[Science Honor Roll](#)

Visualize and Retrieve Data

GLOBE provides the ability to view and interact with data measured across the world. Select our [visualization tool](#) to map, graph, filter and export data that have been measured across GLOBE protocols since 1995. Currently the GLOBE Data Visualization Tool supports a subset of protocols. Additional Features and capabilities are being added.

Enter the Visualization System

Tutorials on Using the Visualization System

[PDF version](#)
[PowerPoint version](#)

Long-term Data

Long-term air temperature and precipitation data from the Global Historical Climate Network (GHCN).

This data is provided as a [Google Earth KML](#) file, which displays reporting stations of long-term air temperature and precipitation data from the National Climatic Data Center (NCDC).

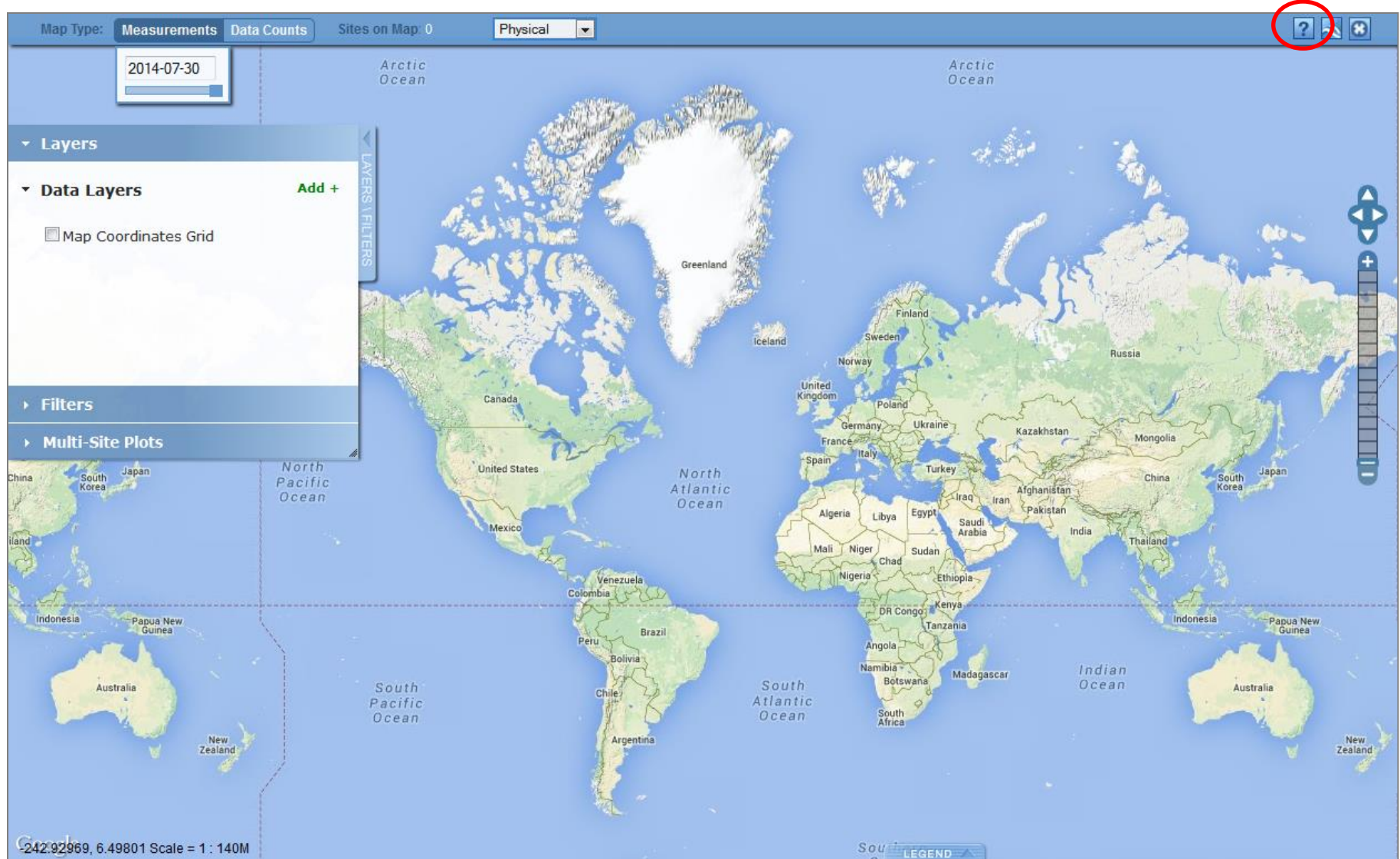
[Download the KML data](#) and use [Google Earth](#) to locate a long-term data record.

From the popup balloons for each city you can download and view the long-term air temperature and precipitation data record in CSV (comma separated value) format for use in a spreadsheet program. The data are available in monthly or yearly intervals, so if you choose to calculate the yearly averages, you will want to download monthly data to start. Regional averages can be performed on either the monthly or yearly data.

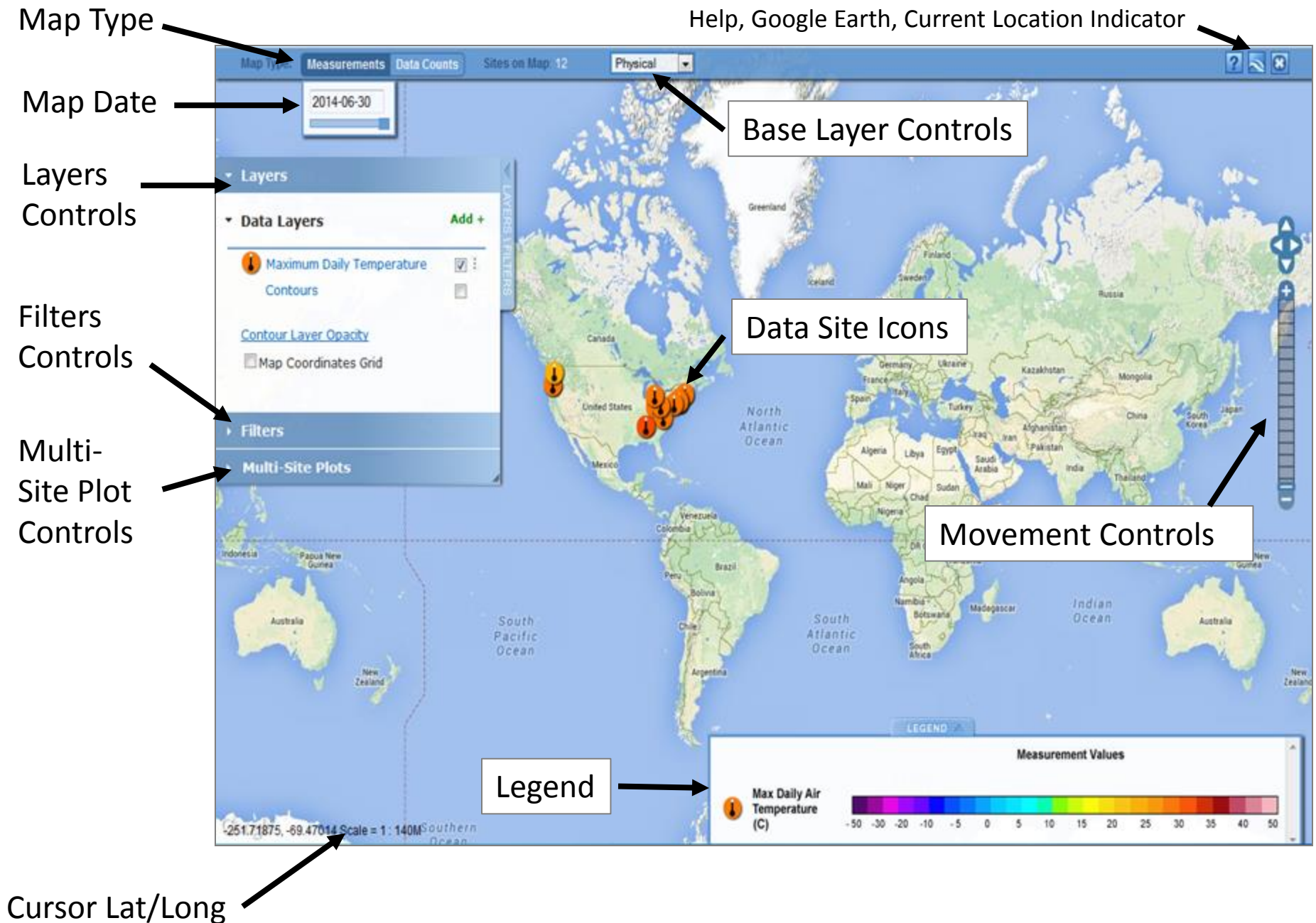
These data come from the Global Historical Climatology Network (GHCN) version 3 dataset (air temperature) and version 2 dataset (precipitation) managed by the National Climatic Data Center (NCDC). More information about this dataset is available through NCDC at: <http://www.ncdc.noaa.gov/ghcnm>

Refer to the [Google Earth Instruction Guide](#) for more detailed instructions on using Google Earth and the [Viewing Long-term Air Temperature and Precipitation Data Guide](#) for more information about the data format.

This is the GLOBE Visualization Landing Page. Read the Welcome box and then close it. The  button on the upper right links to this tutorial.

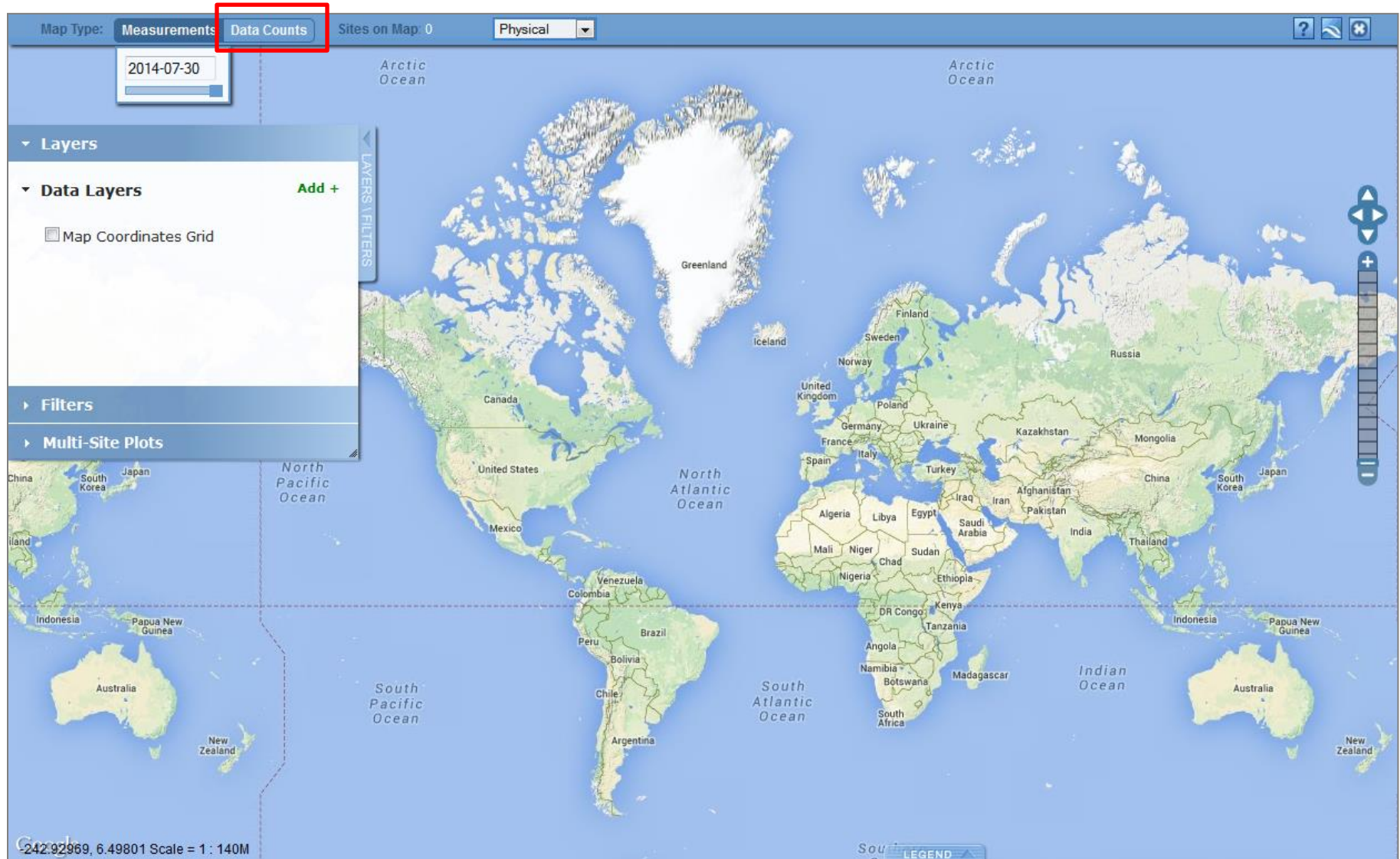


Overview of the Visualization Window Features



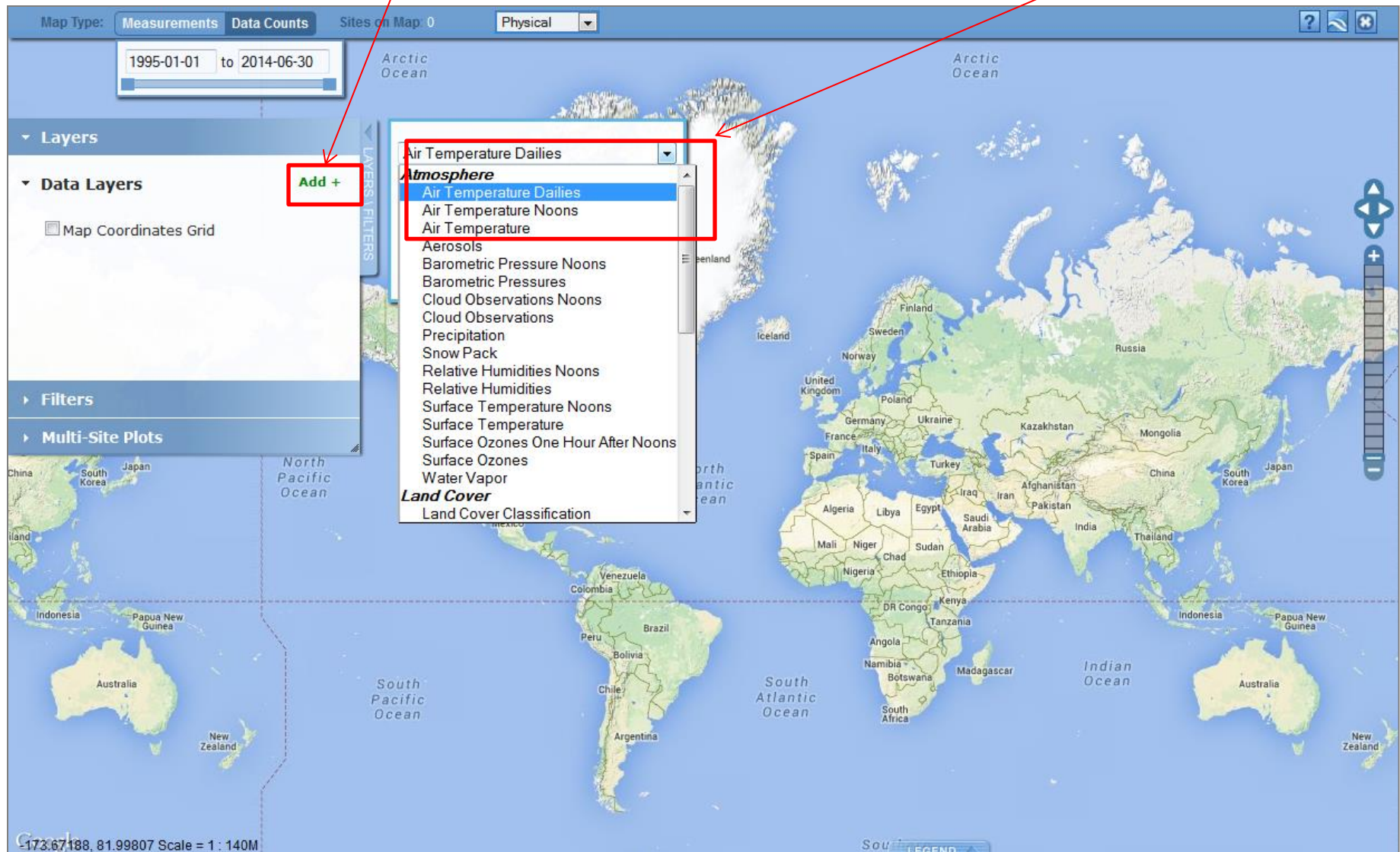
Click on [Data Counts](#).

The Data Counts view helps identify sites with larger datasets for a given data type.

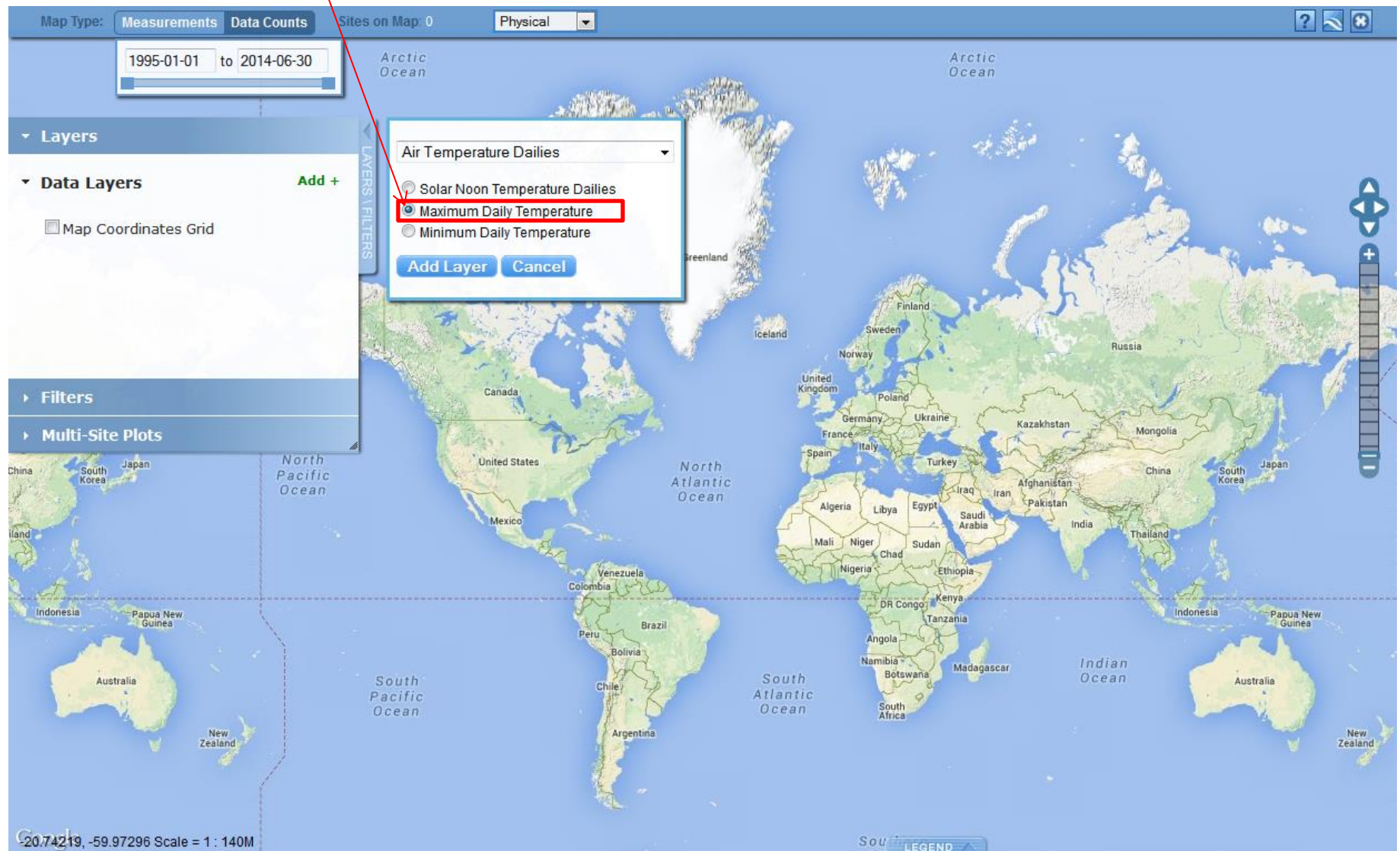


To see some data, click on **Add+** next to Data Layers.

Select the data type you wish to see from the drop down menu.



For this tutorial select Air Temperature Dailies from the drop down, click on the radio button next to **Maximum Daily Temperature**, and then click on the **Add Layer** button.



The new layer will be added to the map. By default, the **Map Date Range** is set to the entire history of GLOBE.



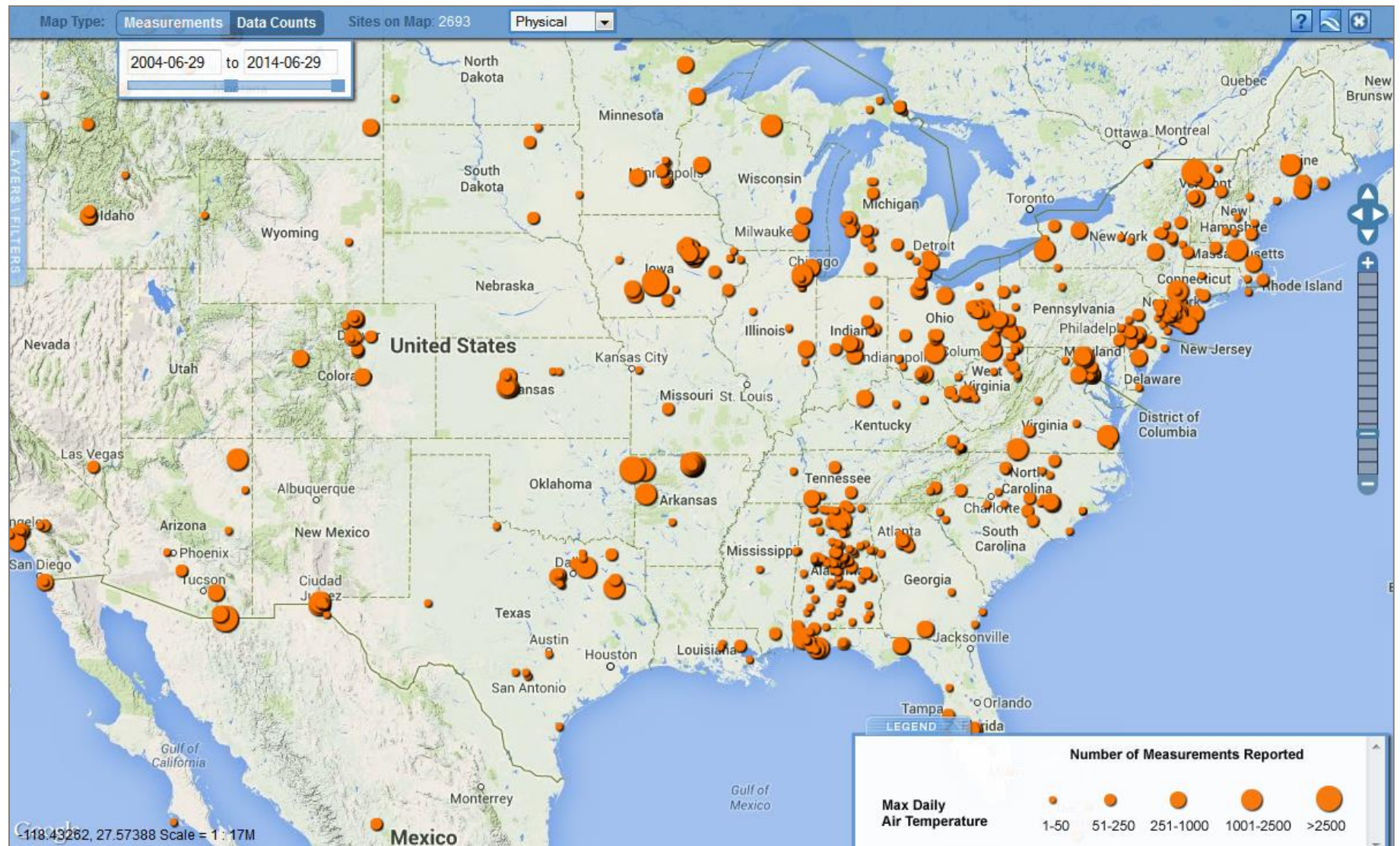
When the pop-out menus cover some of the data, they can be minimized and maximized by clicking on their tabs.



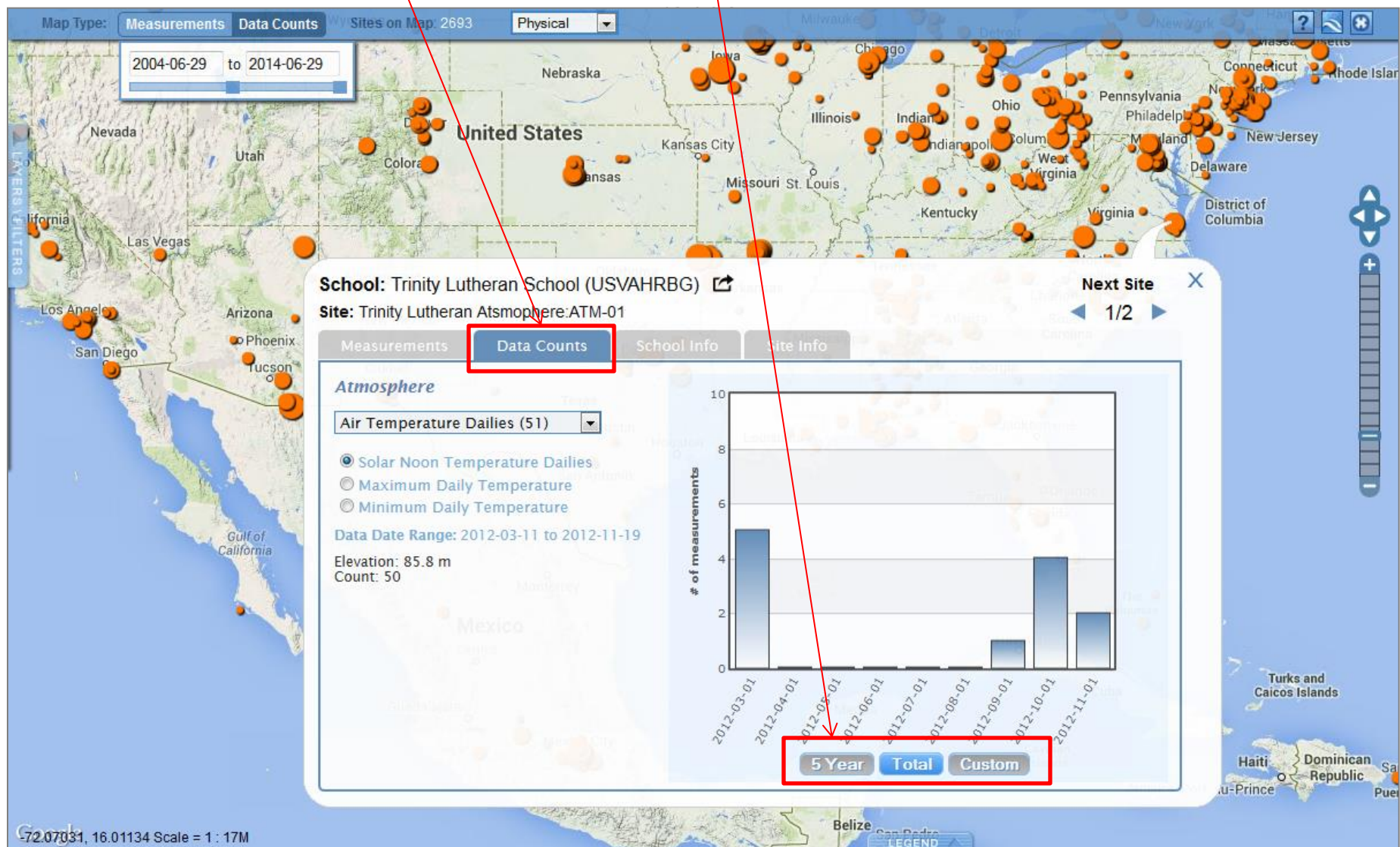
You can control how much of the world map is visible using the movement controls or your mouse. With the mouse, click and drag in any direction to move the map, double click to zoom in one unit on the cursor location, or use the mouse scroll wheel to zoom in and out.



Narrowing the Map Date Range to the past 10 years and zooming in shows the spread of GLOBE measurements and where there are sites with larger datasets. These sites offer better possibilities for study in research projects.

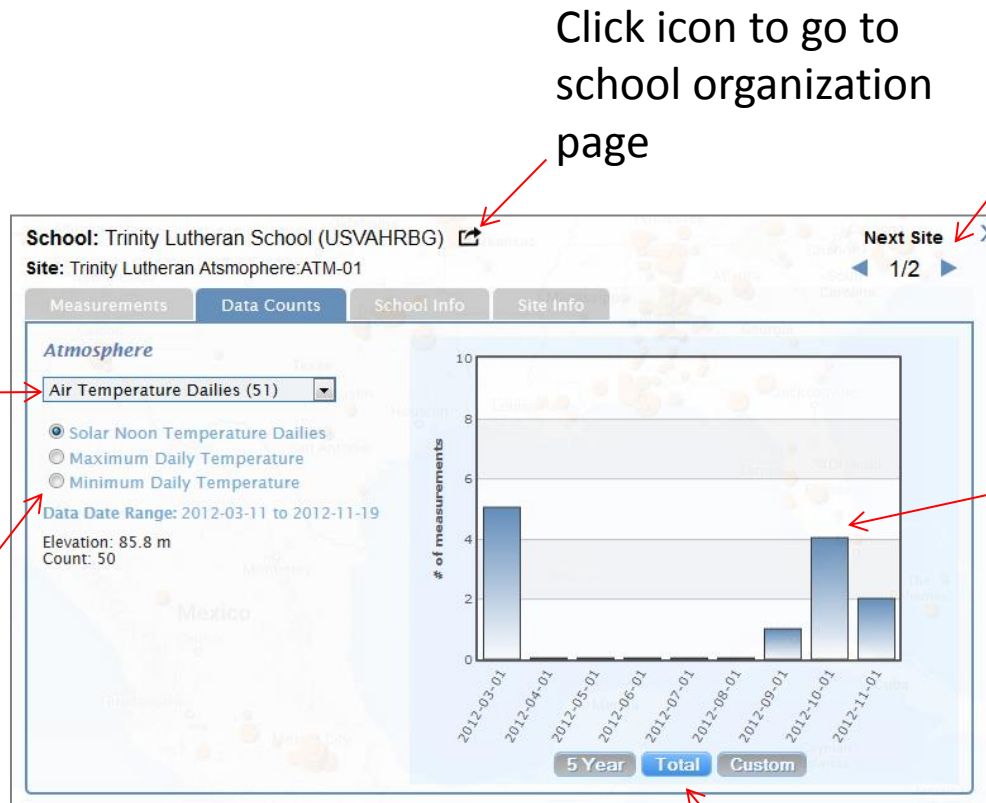


Clicking on an icon on the map opens a site info window. Since the map type is Data Counts, that is the default selection. A plot of the selected data type is displayed showing data counts for the last 5 years for the selected site. You can also select total years or a custom date range.



Data Counts Site Info Window:

This site info window gives information about the site and is the gateway to creating tables and plots of site data.



Click icon to go to school organization page

Cycle through sites whose icons are on top of each other

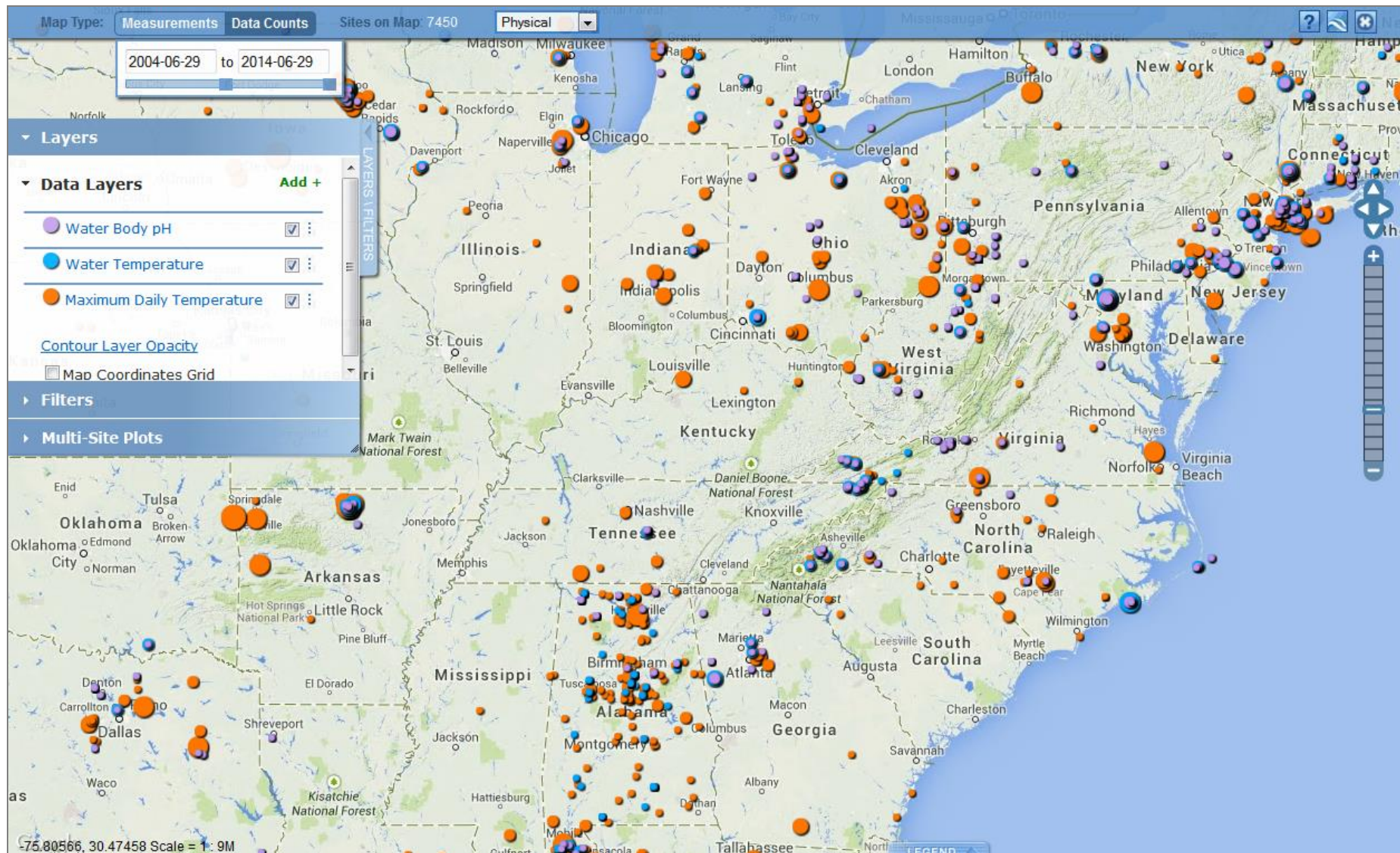
Data Type and (total # of measurements)

Datasets (select a dataset to change the plot view)

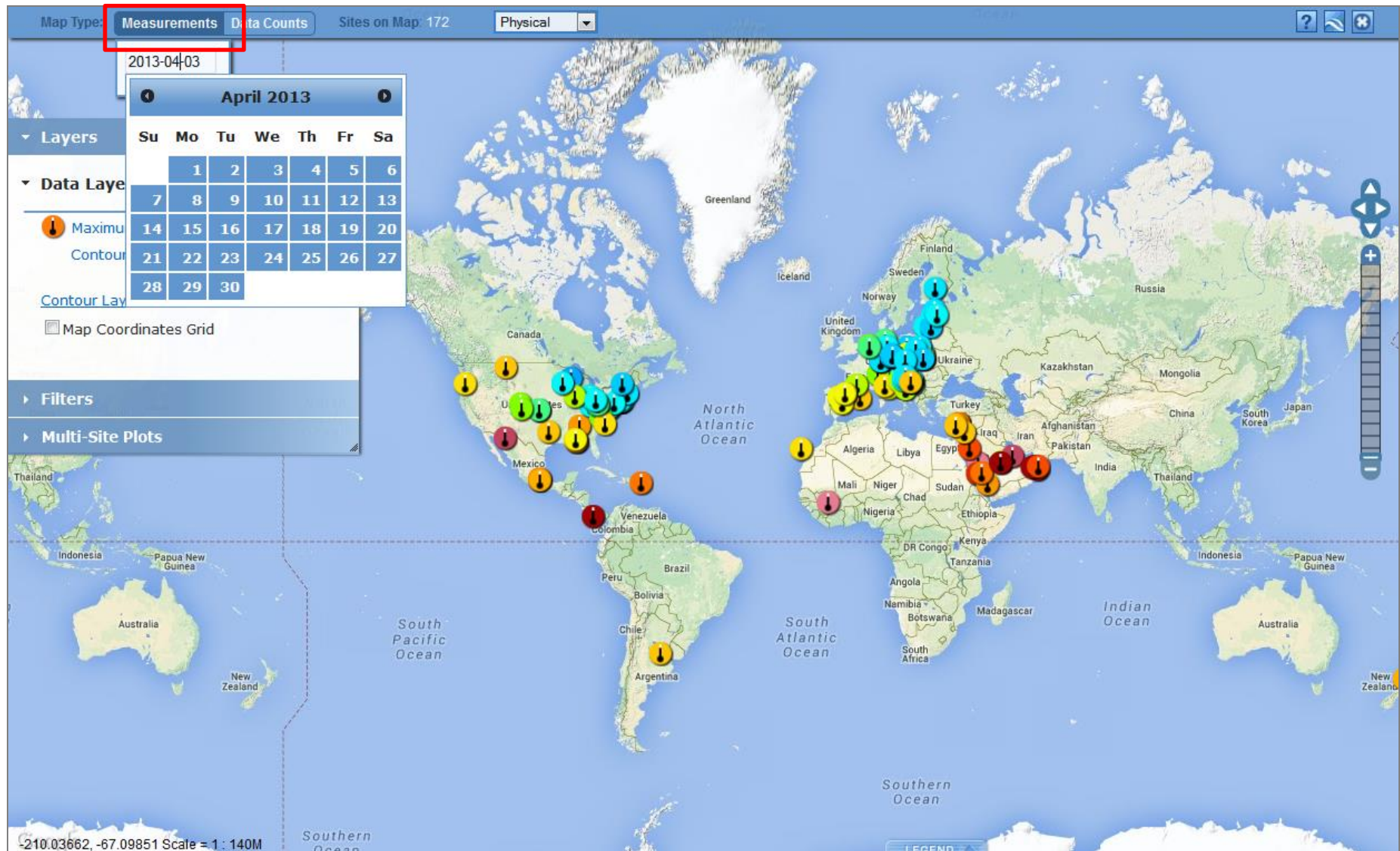
Roll-over bar graph to see the total # of measurements for each interval

Change plot time range

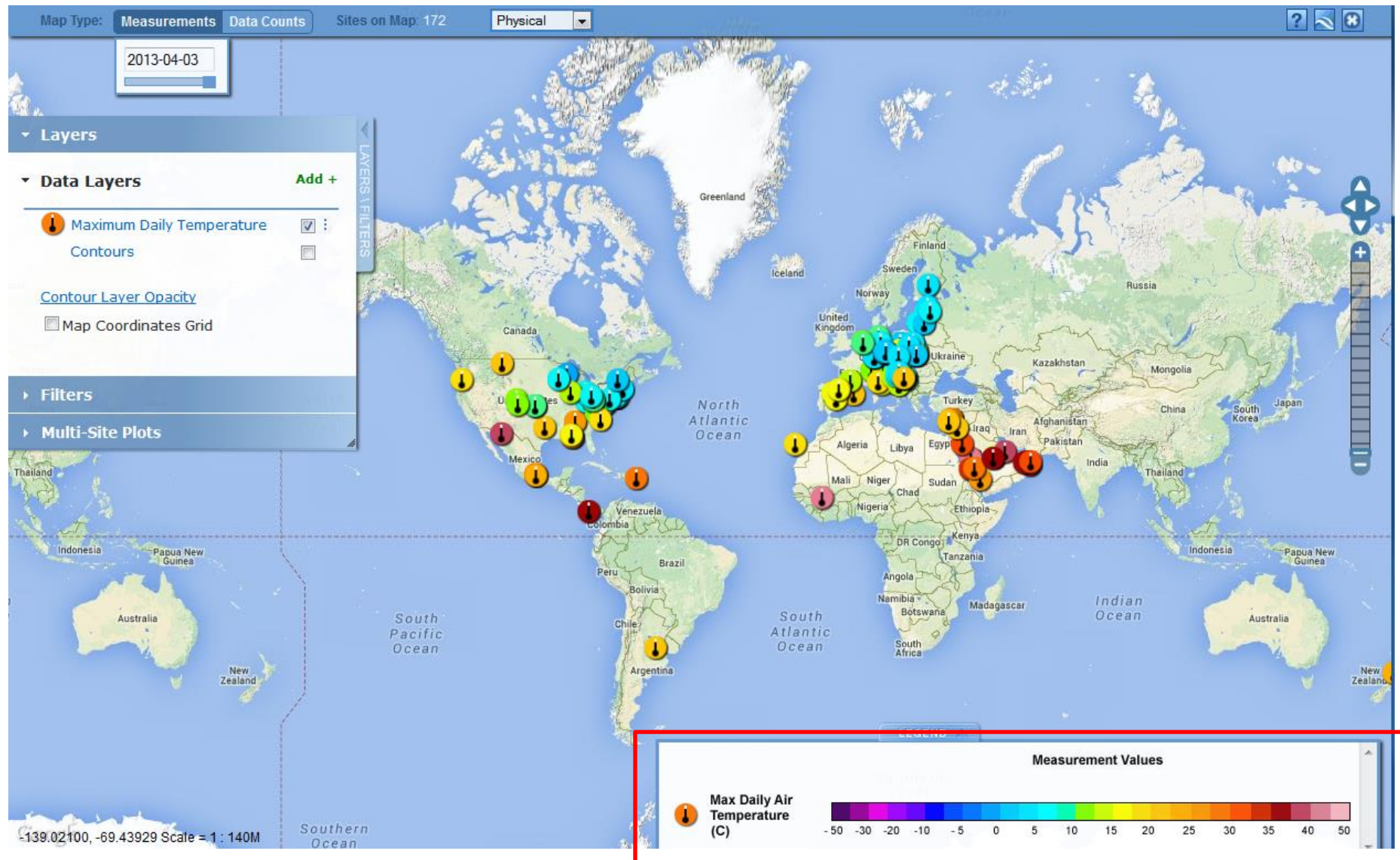
Additional data layers can be added to find locations with multiple types of data.
Using layers and the filter tool you can find a data set to meet just about any investigation need.



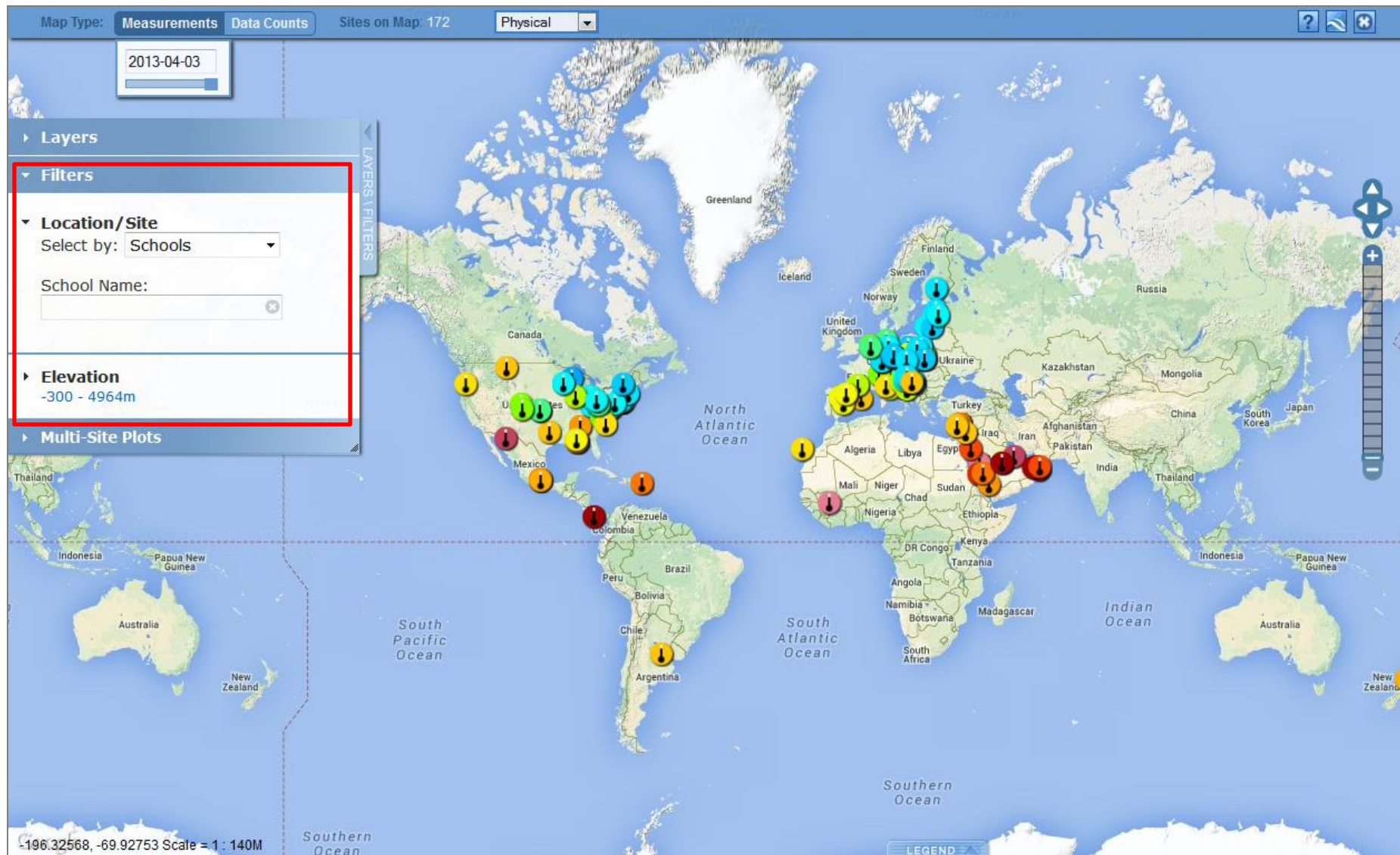
Now, let's focus on measurements data. Zoom out and click on the Map Type **Measurements**. Now the map shows actual values of maximum air temperature for the current day. Change the date to April 3, 2013.



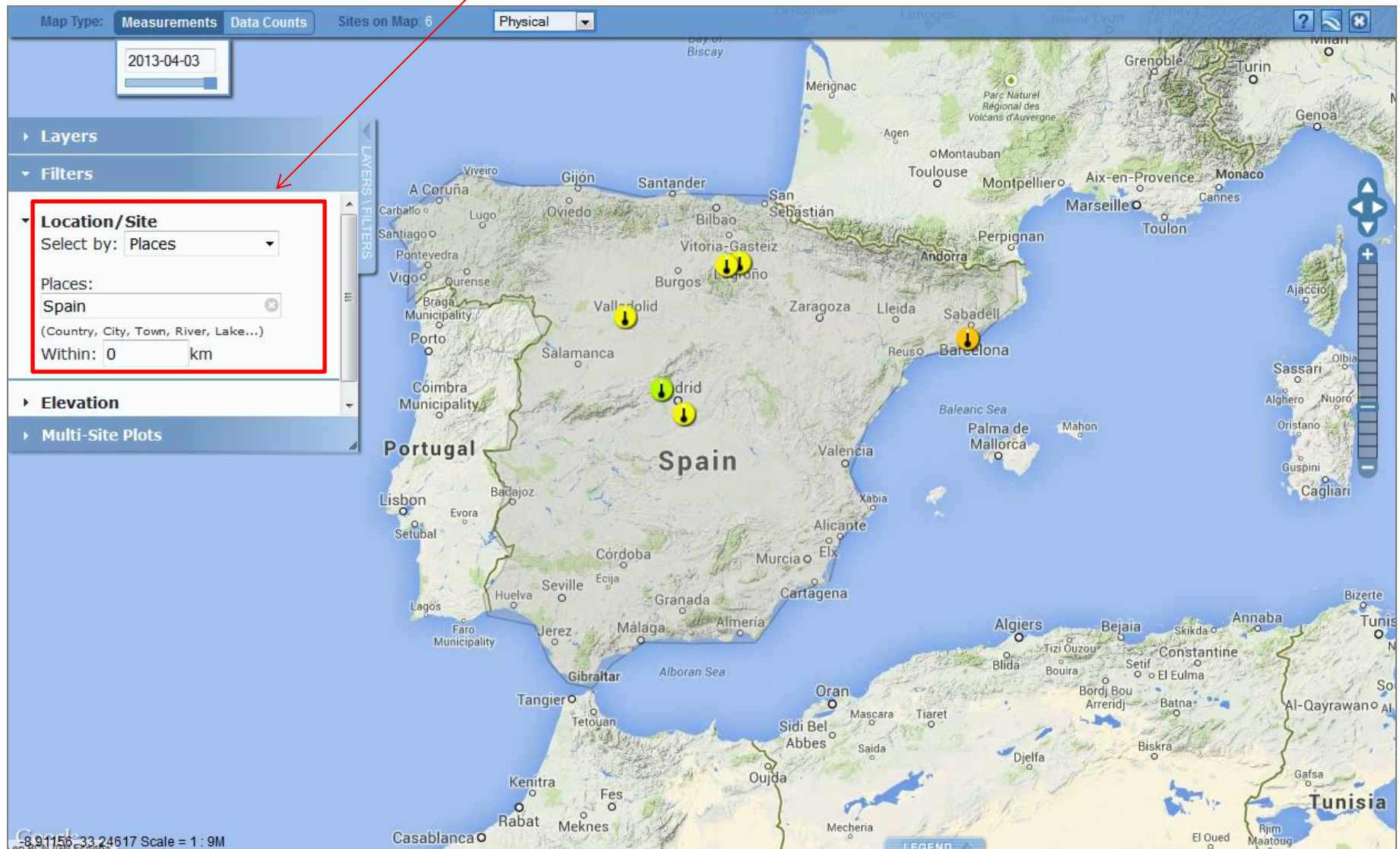
The box at the bottom right shows the legend for the data layer – the colors in the scale correspond to the possible data values for that data type. Each data layer has its own unique icon.



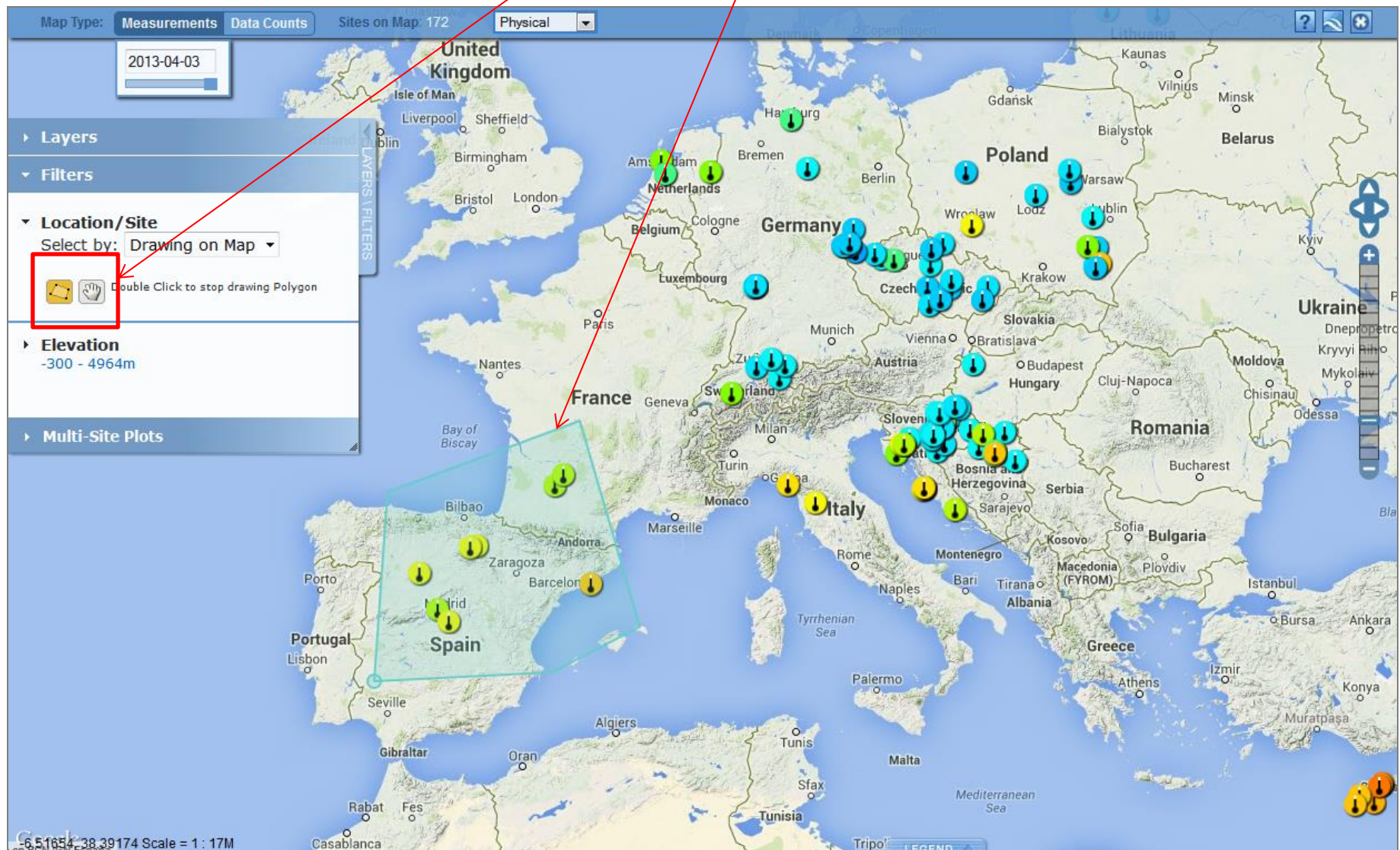
The Filters box is where you refine which data are shown on the map. Click on Filters on the left. You can limit the map to display only data at a specific location (such as a country) or at a specific elevation range.



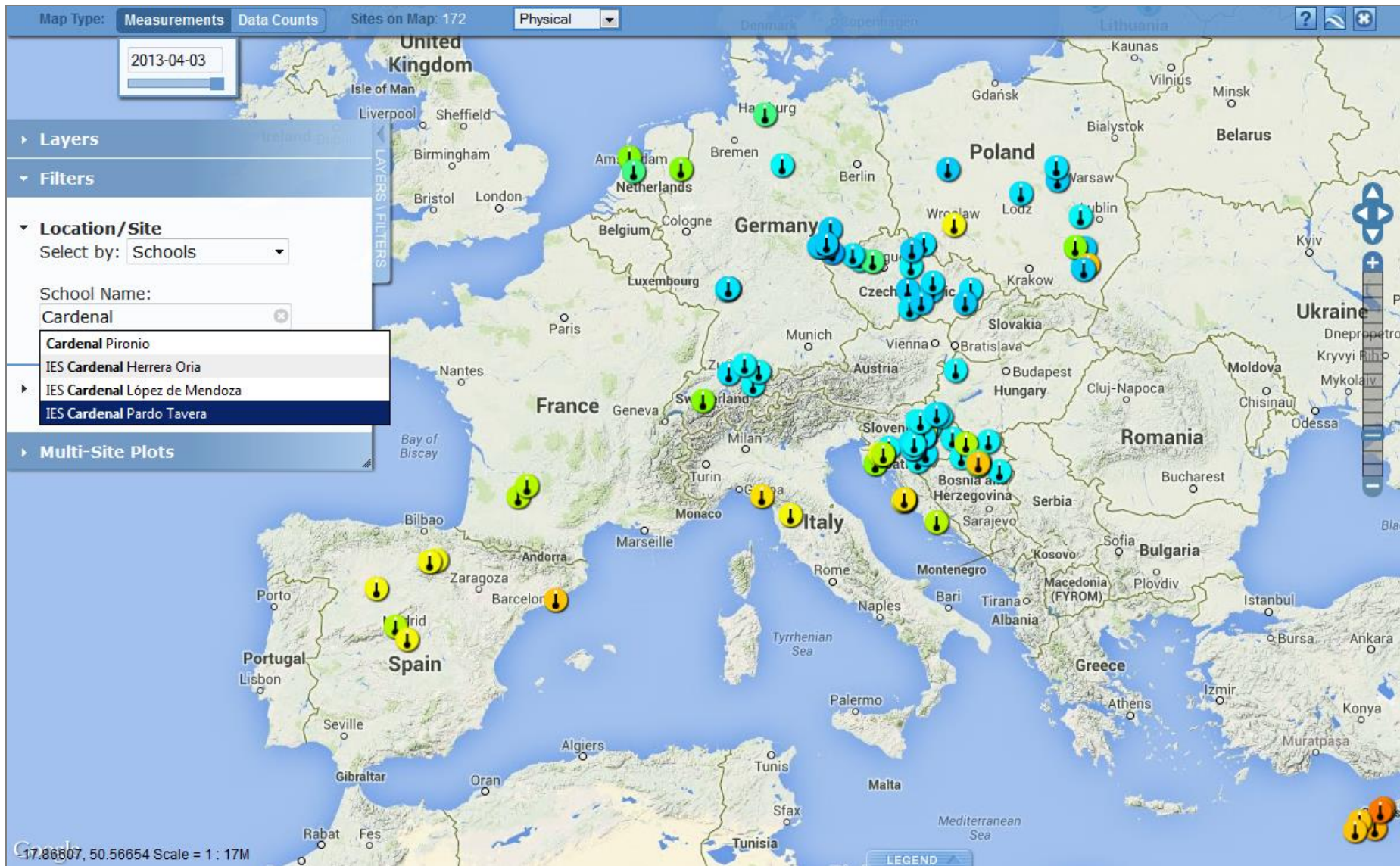
Using the Filters tool, let's select 'Places' in the Location/Site filter and then enter in Spain. The map will zoom into the selected place and only display sites in the location



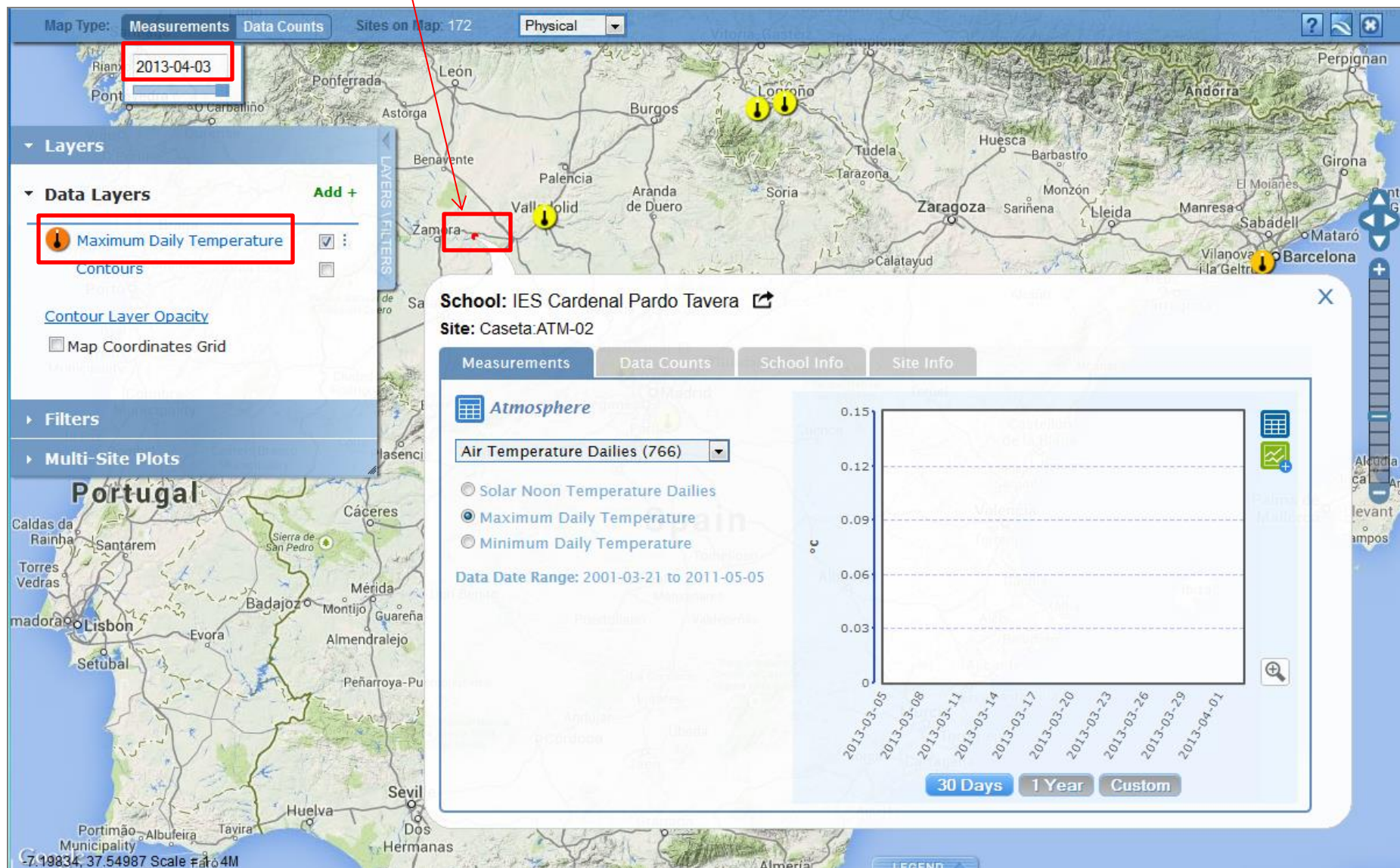
You can also filter data sites using the 'Drawing on Map' option. This allows you to select sites by drawing a polygon around the sites you want to isolate.
Click on the 'hand' icon to exit the tool.



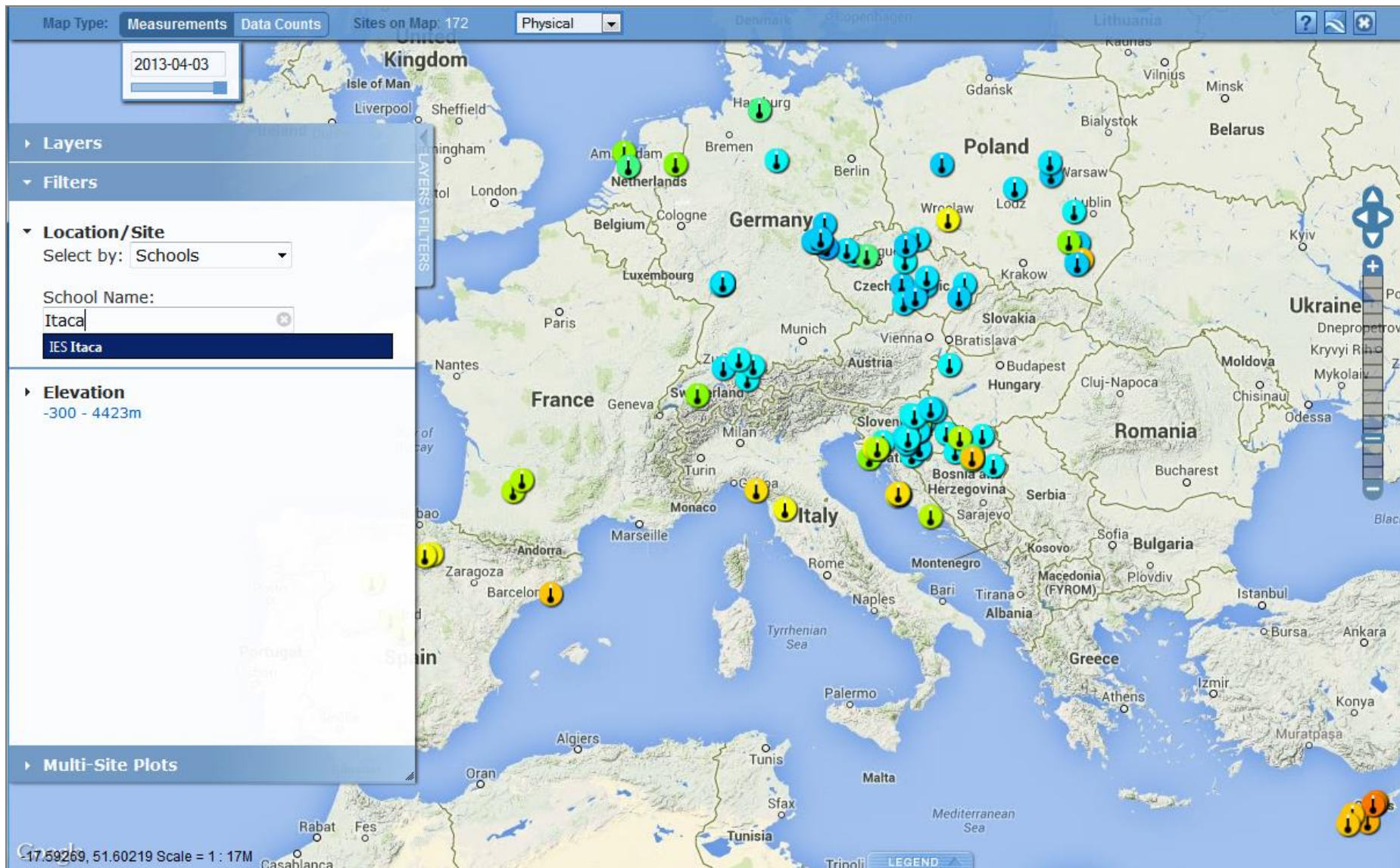
Let's search for a particular school in Spain. Type in 'Cardenal' in the school name field. The system should auto-complete to show a list of schools that have that name in the title. Select 'IEC Cardenal Pardo Tavera'.



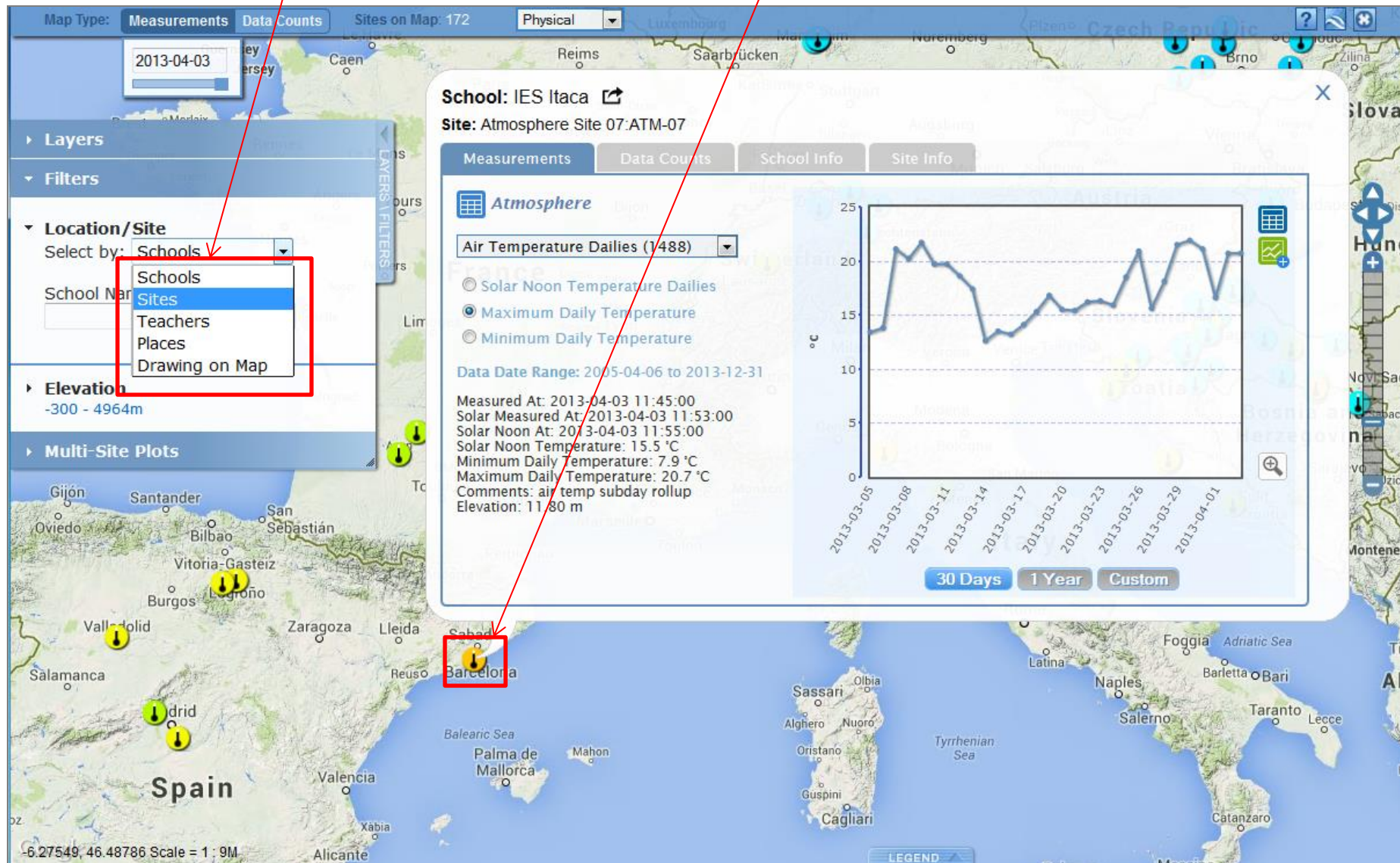
Note how the site icon is a small red dot. This indicates no data from the added data layers was entered on the current map date



Let's search for another school. Type in 'Itaca' in the school name field and then Select 'IEC Itaca'.



The first site found at IES Itaca is displayed and is now pointing at a Max Daily Temperature icon. Measurements were recorded within the 30 day time frame so the plot has data. You can also search by site or teacher. Let's now examine the measurement data at this site.



Measurements Site Info Window:

The measurements tab allows you to get your data in numerous ways

Click this icon to view data tables for all of your data

Data at this site can be found in this date range

Measurement info for the selected data type



Click this icon to view the plot data in a table

Click this icon to add the site to a multi-site time series plot

Roll-over a plot point to see measurement value and date

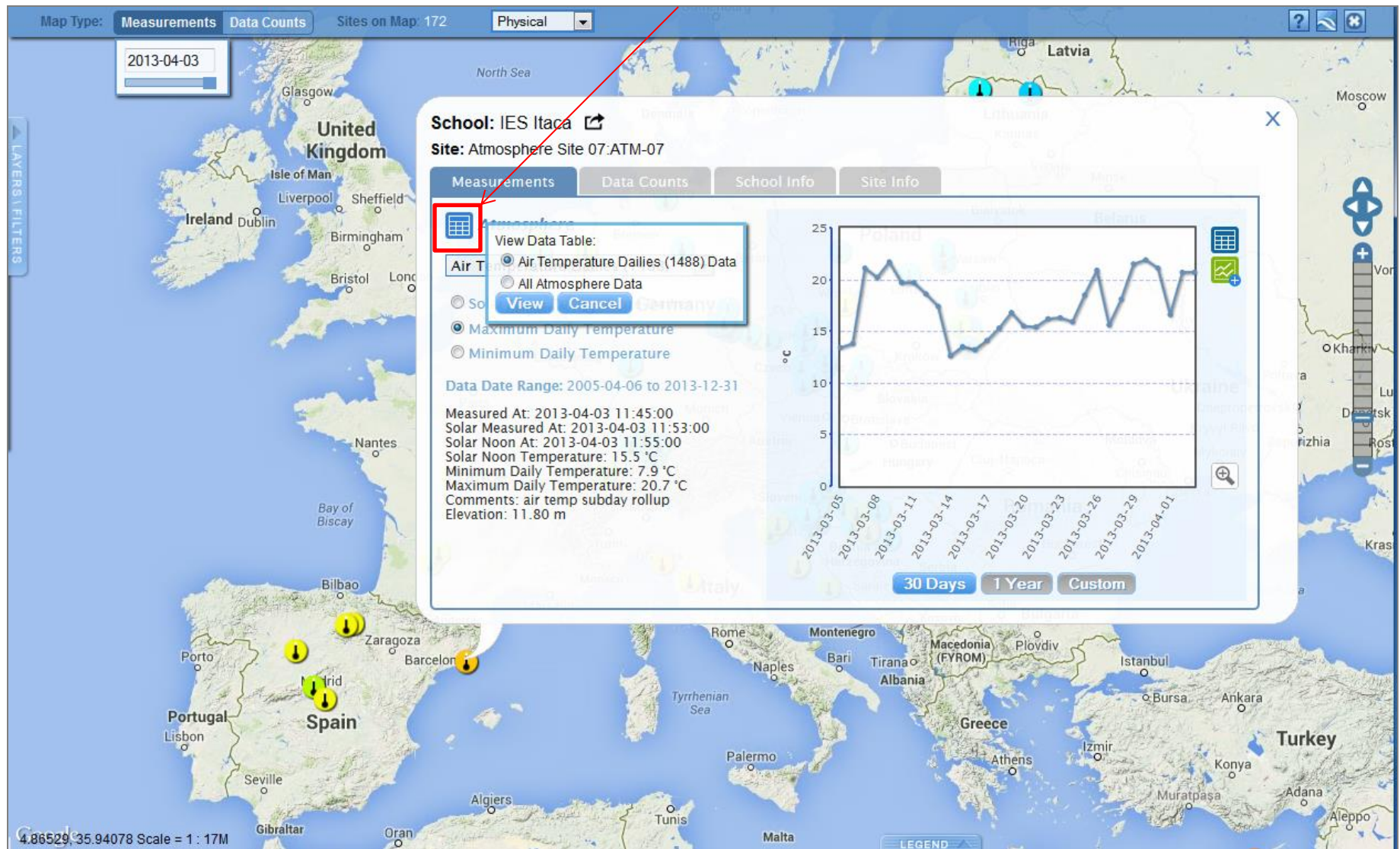
Click the zoom icon for a larger plot view

Change plot time range

menu.



Click on the table icon next to the Atmosphere title. You can either view data tables for the selected data type (Air Temperature Dailies) or all of your Atmosphere data.
Select Air Temperature Dailies.



Note that this table gives values for local solar noon and minimum and maximum daily temperature. Clicking the button at the bottom will export the data in comma delimited format. Close this window.

Map Type: **Measurements** Data Counts Sites on Map: 172 Physical

2013-04-02

IES Itaca : Atmosphere Site 07:ATM-07 Data Table

Measured At	Solar Noon Temperature Dailies (°C)	Minimum Daily Temperature (°C)	Maximum Daily Temperature (°C)
2005-04-06 11:45:00	15.8	9.9	17.4
2005-04-07 11:45:00	17	11.8	17
2005-04-12 11:45:00	16.8	8.7	17.4
2005-04-24 11:45:00	15.8	14.7	19.1
2005-04-25 11:45:00	18.9	11.6	20.1
2005-04-26 12:00:00	18.2	10.8	19.7
2005-04-28 11:45:00	21.1	12.9	21.3
2005-04-29 11:45:00	23.1	13.7	23.6
2005-04-30 11:45:00	22.2	13.6	23.8
2005-05-01 11:45:00	22.4	14.2	23.7
2005-05-02 11:45:00	21.8	14.2	24.6
2005-05-03 11:45:00	22	16.7	22.1
2005-05-04 11:45:00	21.8	15.5	21.8
2005-05-05 11:45:00	19.3	15.2	23.4
2005-05-06 11:45:00	22.1	12.4	22.1
2005-05-07 11:45:00	18.9	12	22.3
2005-05-08 11:45:00	20.2	11.8	20.2
2005-05-09 11:45:00	20.2	13.3	20.3
2005-05-10 11:45:00	22.2	16.4	22.3
2005-05-15 11:45:00	20.2	13.3	22
2005-05-16 11:45:00	18.9	14.4	22.2
2005-05-17 11:45:00	13.1	12.8	20.5
2005-05-20 11:45:00	23.1	13.9	23.1
2005-05-21 11:45:00	23.2	14.2	23.7
2005-05-22 11:45:00	20.8	16.4	23.7
2005-05-23 11:45:00	19.3	14.5	21.4
2005-05-24 11:45:00	21.3	15.8	21.3
2005-05-25 11:45:00	24.4	15.9	25.3
2005-05-26 11:45:00	23.2	15.3	24.4
2005-05-27 11:45:00	23.9	15.1	23.9

Export .csv 2005-04-06 to 2013-12-31 1 - 30 of 1488

12.42389, 35.47690 Scale = 1 : 17M

Map Type: Measurements Data Counts Sites on Map: 172 Physical

2013-04-03

United Kingdom

Ireland

Spain

Portugal

Italy

Turkey

Latvia

North Sea

Bay of Biscay

Tyrrhenian Sea

LEGEND

4.86529, 35.94078 Scale = 1 : 17M

School: IES Itaca

Site: Atmosphere Site 07:ATM-07

Measurements Data Counts School Info Site Info

View Data Table:

- ☒ Air Temperature Dailies (1488) Data
- ☐ All Atmosphere Data

View **Cancel**

30 Days **1 Year** **Custom**

Data Date Range: 2005-04-06 to 2013-12-31

Measured At: 2013-04-03 11:45:00
 Solar Measured At: 2013-04-03 11:53:00
 Solar Noon At: 2013-04-03 11:55:00
 Solar Noon Temperature: 15.5 °C
 Minimum Daily Temperature: 7.9 °C
 Maximum Daily Temperature: 20.7 °C
 Comments: air temp subday rollup
 Elevation: 11.80 m

25
20
15
10
5
0

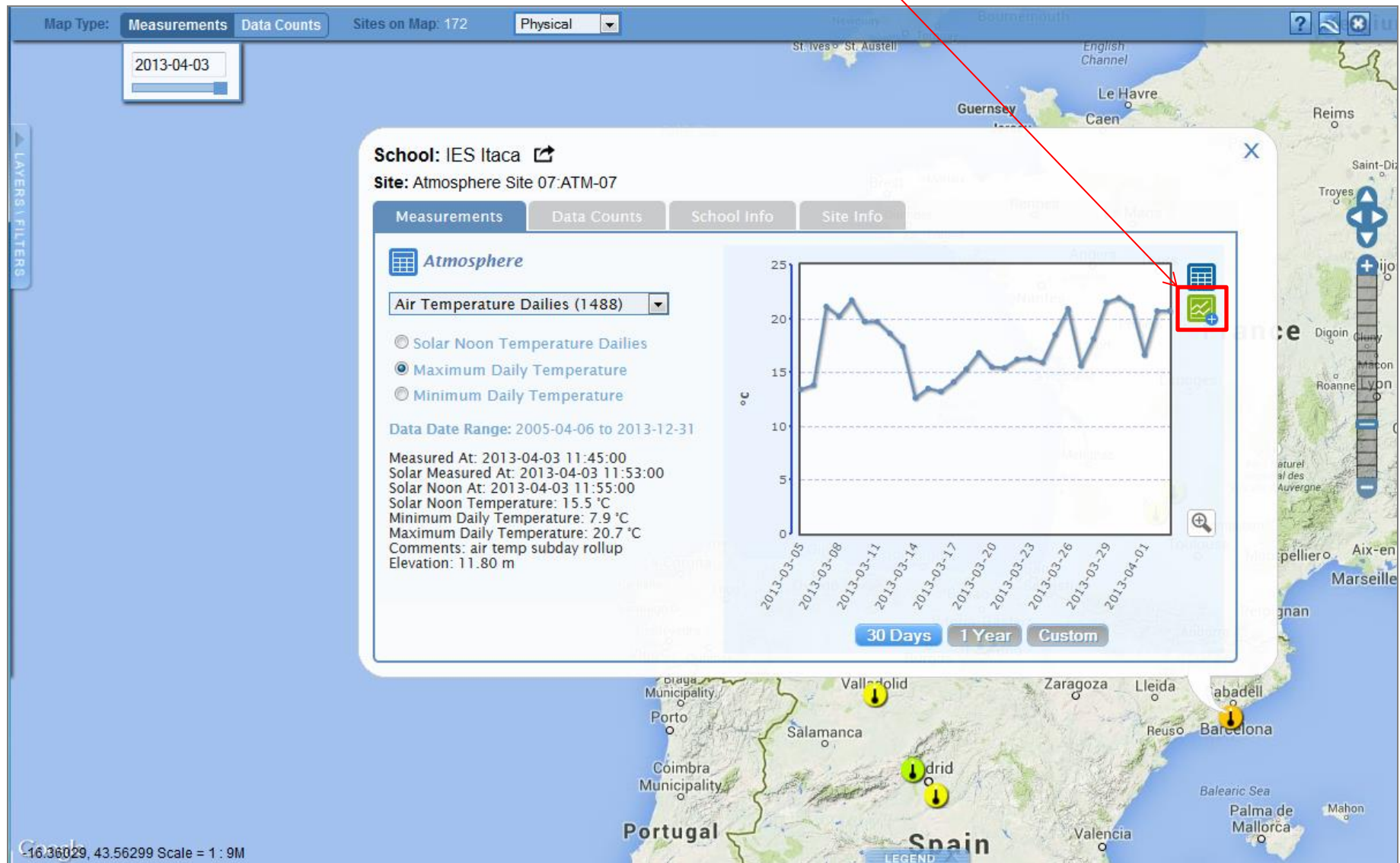
2013-03-05 2013-03-08 2013-03-11 2013-03-14 2013-03-17 2013-03-20 2013-03-23 2013-03-26 2013-03-29 2013-04-01

Now, all of your data is displayed in the table. If you right click any column header, a window will open to allow you to filter the data columns.

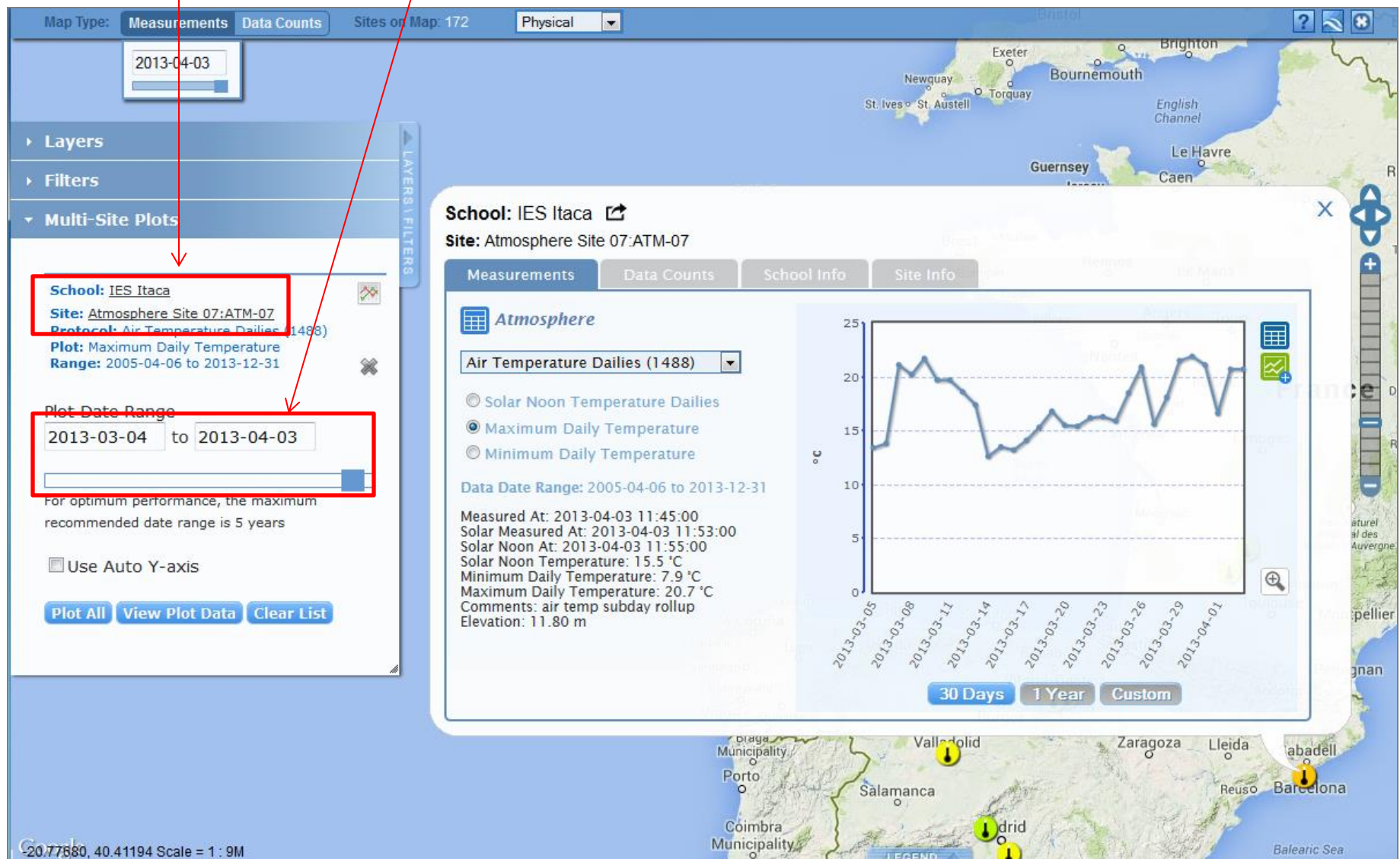
The screenshot shows a web application interface for atmospheric data. At the top, there are tabs for 'Measurements' and 'Data Counts', and a 'Sites on Map: 172' indicator. A map of the Mediterranean region is visible in the background. The main data table is titled 'IES Itaca : Atmosphere Site 07:ATM-07 Data Table (Data may be a few hours old)'. It contains columns for 'Measured At', 'Latitude', 'Longitude', 'Elevation', 'Solar Noon Temperature Dailies (°C)', 'Pressure', and 'Sea Level Pressure'. A right-click context menu is open over the 'Measured At' column header, showing a list of columns with checkboxes to filter the data. The menu includes: 'Measured At' (checked), 'Latitude' (checked), 'Longitude' (checked), 'Elevation' (checked), 'Solar Noon Temperature Dailies (°C)' (checked), 'Pressure' (checked), 'Sea Level Pressure' (checked), 'Pressure Method' (checked), 'Aerosol Optical Thickness' (checked), 'Transmission Percent' (checked), 'Sensor Wavelength Nm' (unchecked), 'Cloud Cover' (unchecked), 'Nimbostratus' (unchecked), 'Cumulonimbus' (checked), 'Stratocumulus' (checked), 'Stratus' (checked), 'Cumulus' (checked), and 'Altostratus' (checked). At the bottom right, there is an 'Export .csv' button and a date range selector set to '1995-01-01 to 2014-07-30' with '1 - 30 of 177070' records displayed.

Measured At	Latitude	Longitude	Elevation	Solar Noon Temperature Dailies (°C)	Pressure	Sea Level Pressure
2005-03-31 23:00:00	41.341	2.048	11.8		1029.9	1031
2005-03-31 23:15:00	41.341	2.048	11.8		1029.9	1031
2005-03-31 23:30:00	41.341	2.048	11.8		1029.9	1031
2005-03-31 23:45:00	41.341	2.048	11.8		1029.9	1031
2005-04-01 00:00:00	41.341	2.048	11.8		1029.9	1031
2005-04-01 00:15:00	41.341	2.048	11.8		1029.9	1031
2005-04-01 00:30:00	41.341	2.048	11.8		1029.9	1031
2005-04-01 00:45:00	41.341	2.048	11.8		1029.9	1031
2005-04-01 01:00:00	41.341	2.048	11.8		1029.9	1031
2005-04-01 01:15:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 01:30:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 01:45:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 02:00:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 02:15:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 02:30:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 02:45:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 03:00:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 03:15:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 03:30:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 03:45:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 04:00:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 04:15:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 04:30:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 04:45:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 05:00:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 05:15:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 05:30:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 05:45:00	41.341	2.048	11.8		1028.9	1030
2005-04-01 06:00:00	41.341	2.048	11.8		1028.9	1030

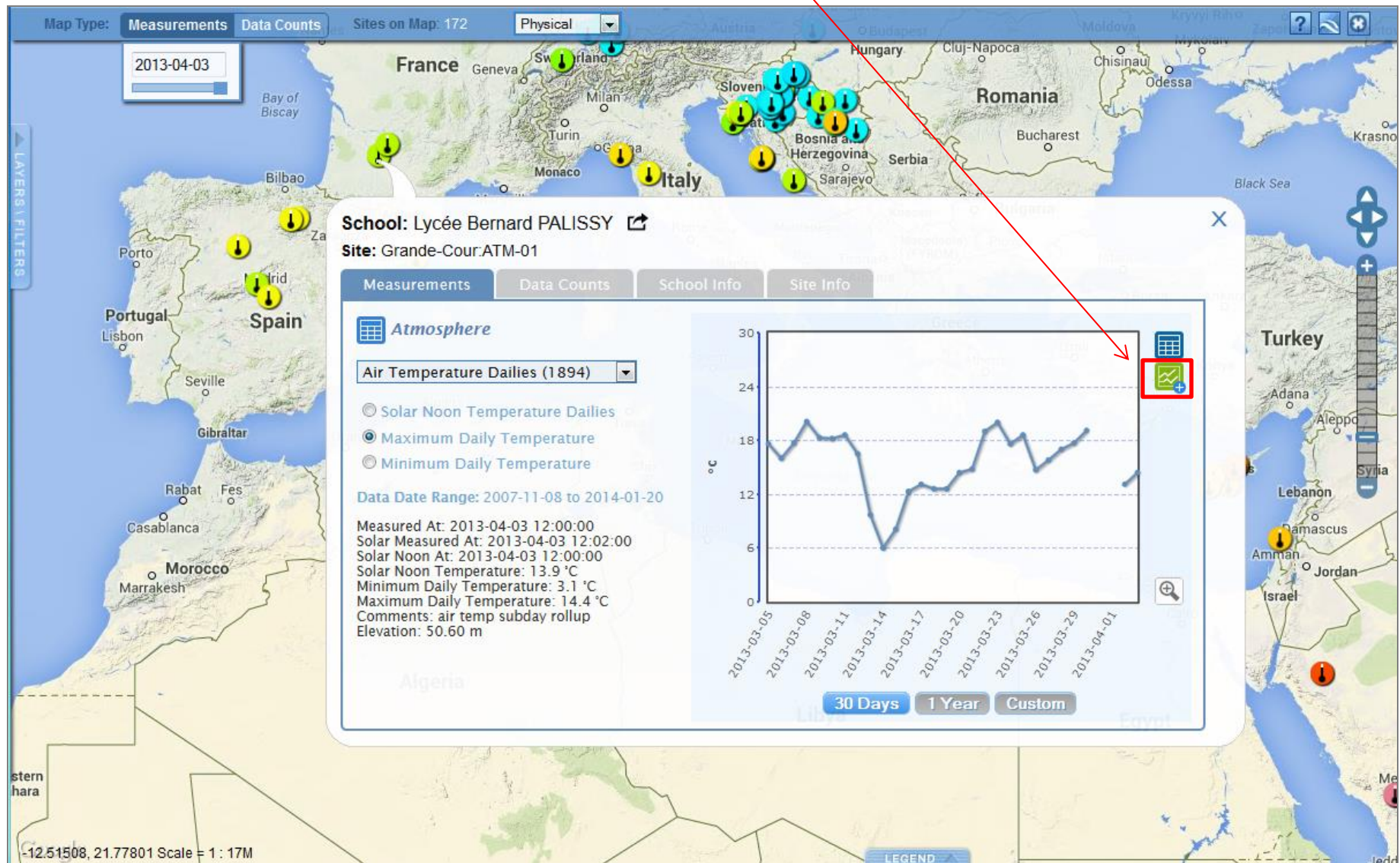
To compare this site data to other sites, you can add the site to a multi-site time series plot by clicking on this button. Keep the plot range at 30 days and then select the button



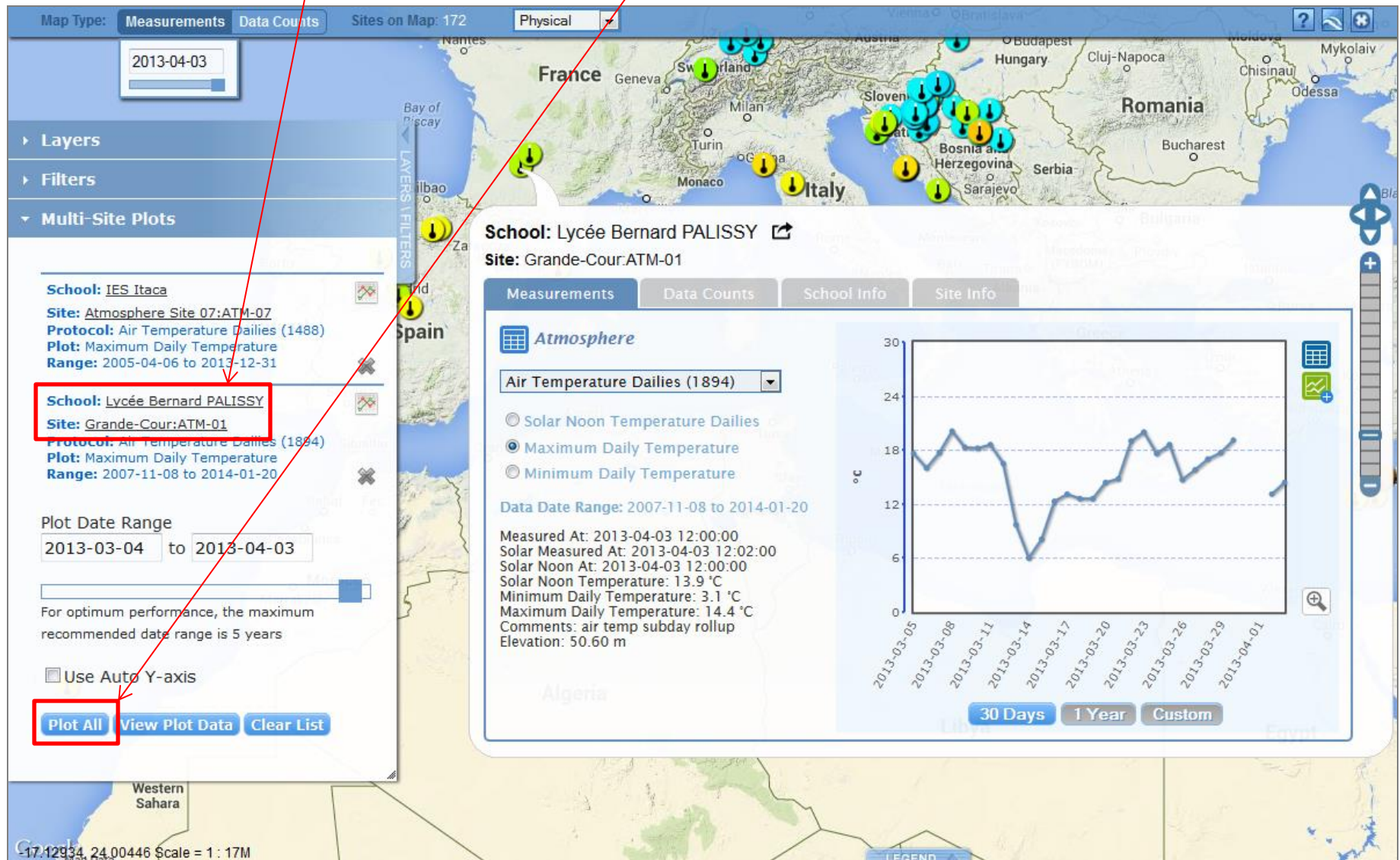
The site is added to the Multi-Site Plots list with the date range from the site plot pre-selected. You can change the dates by clicking on the date fields or by using the slider.



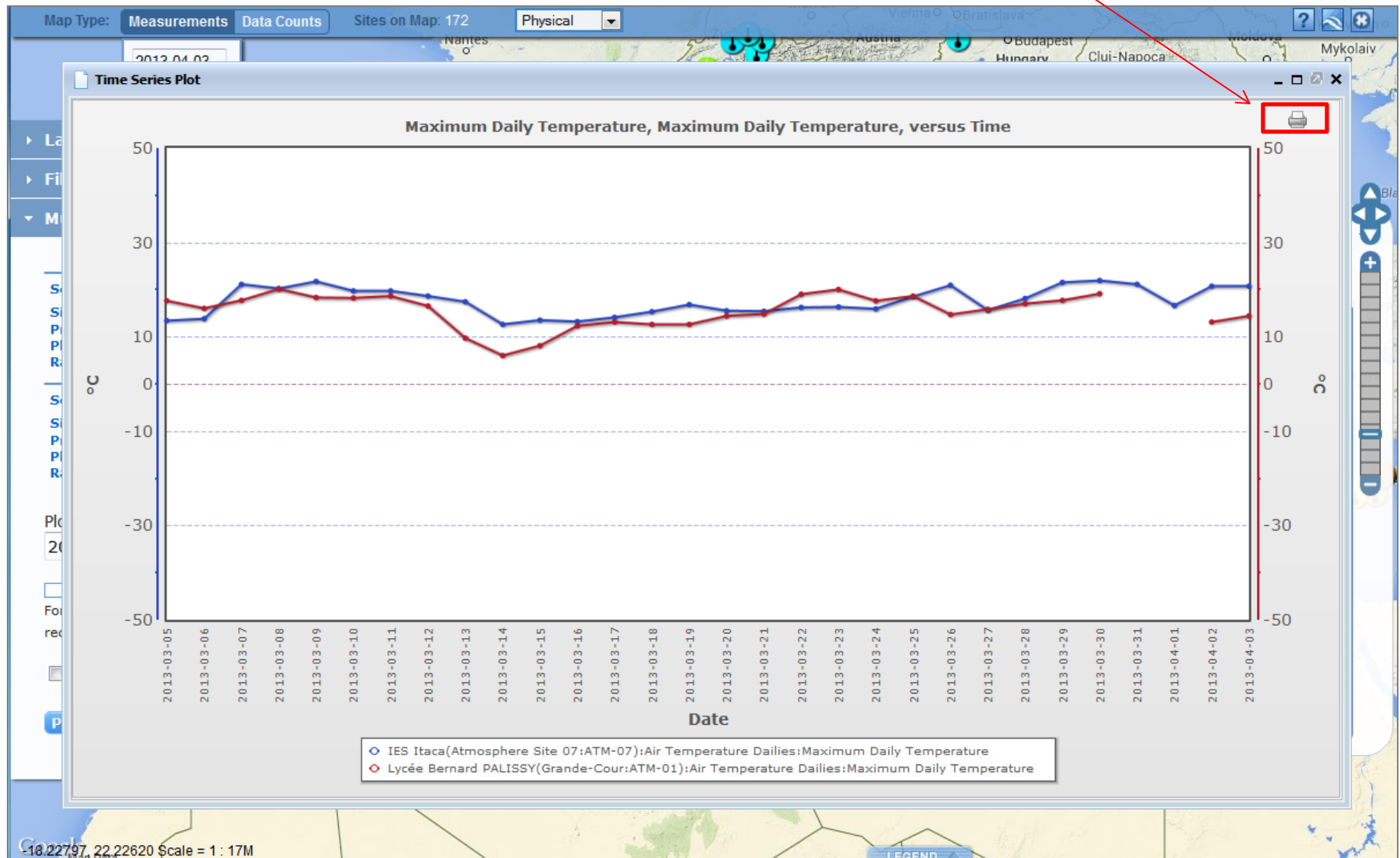
Now let's select another site. Close the IES Itaca site info window and then select one of the sites in France. Again click on the icon to add the site to the multi-site time series plot.



The second site is now added. Now click on the 'Plot All' button to view the time series plot.



Here is the result. A maximum of 6 datasets can be added to the plot list and the maximum plot date range recommended is 5 years. Clicking the print button will print out a copy of this graph.



If you check the **Use Auto Y-axis** box, the software adjusts the y-axes individually to spread the data vertically on the graph. With two datasets with the same units, the result can be misleading. Click the 'View Plot Data' to view the data in a table.

Layers

Filters

Multi-Site Plots

School: IES Itaca
Site: Atmosphere Site 07:ATM-07
Protocol: Air Temperature Dailies (1488)
Plot: Maximum Daily Temperature
Range: 2005-04-06 to 2013-12-31

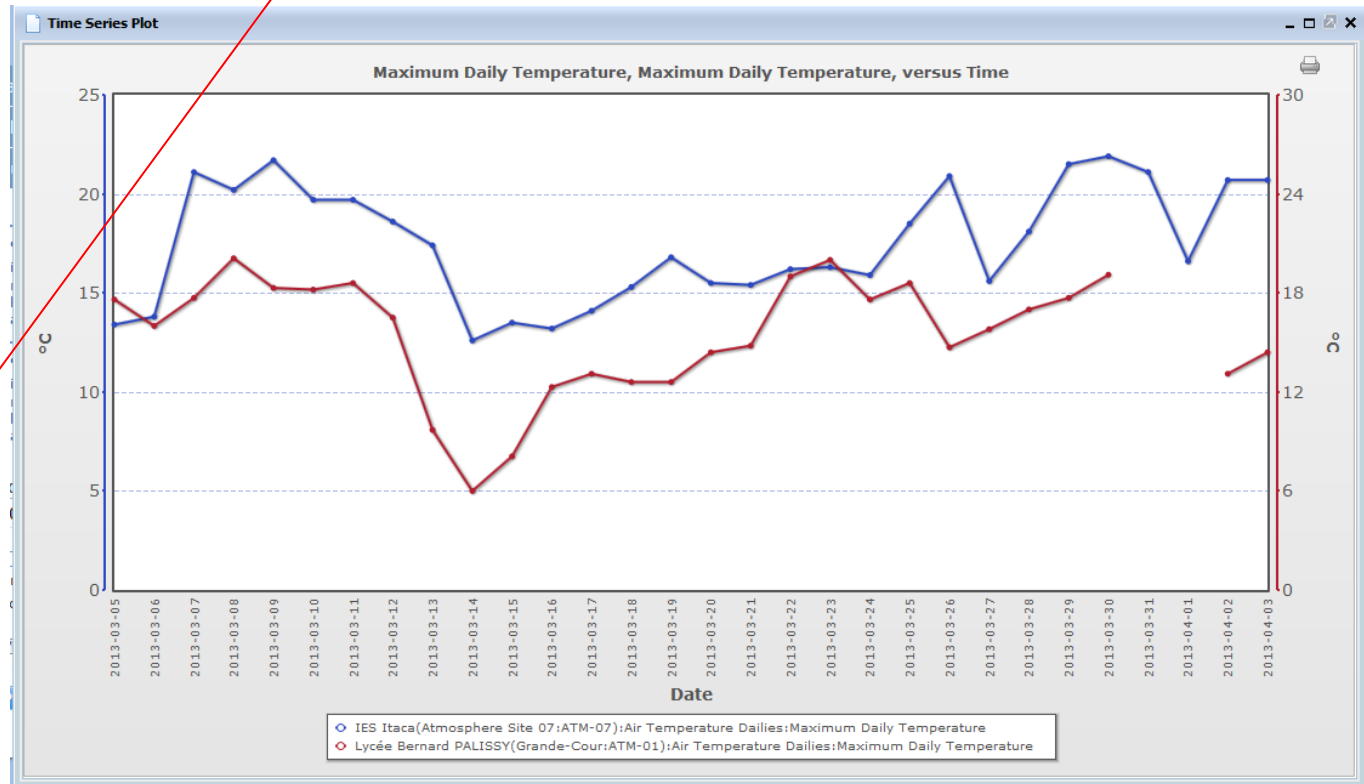
School: Lycée Bernard PALISSY
Site: Grande-Cour:ATM-01
Protocol: Air Temperature Dailies (1894)
Plot: Maximum Daily Temperature
Range: 2007-11-08 to 2014-01-20

Plot Date Range
2013-03-04 to 2013-04-03

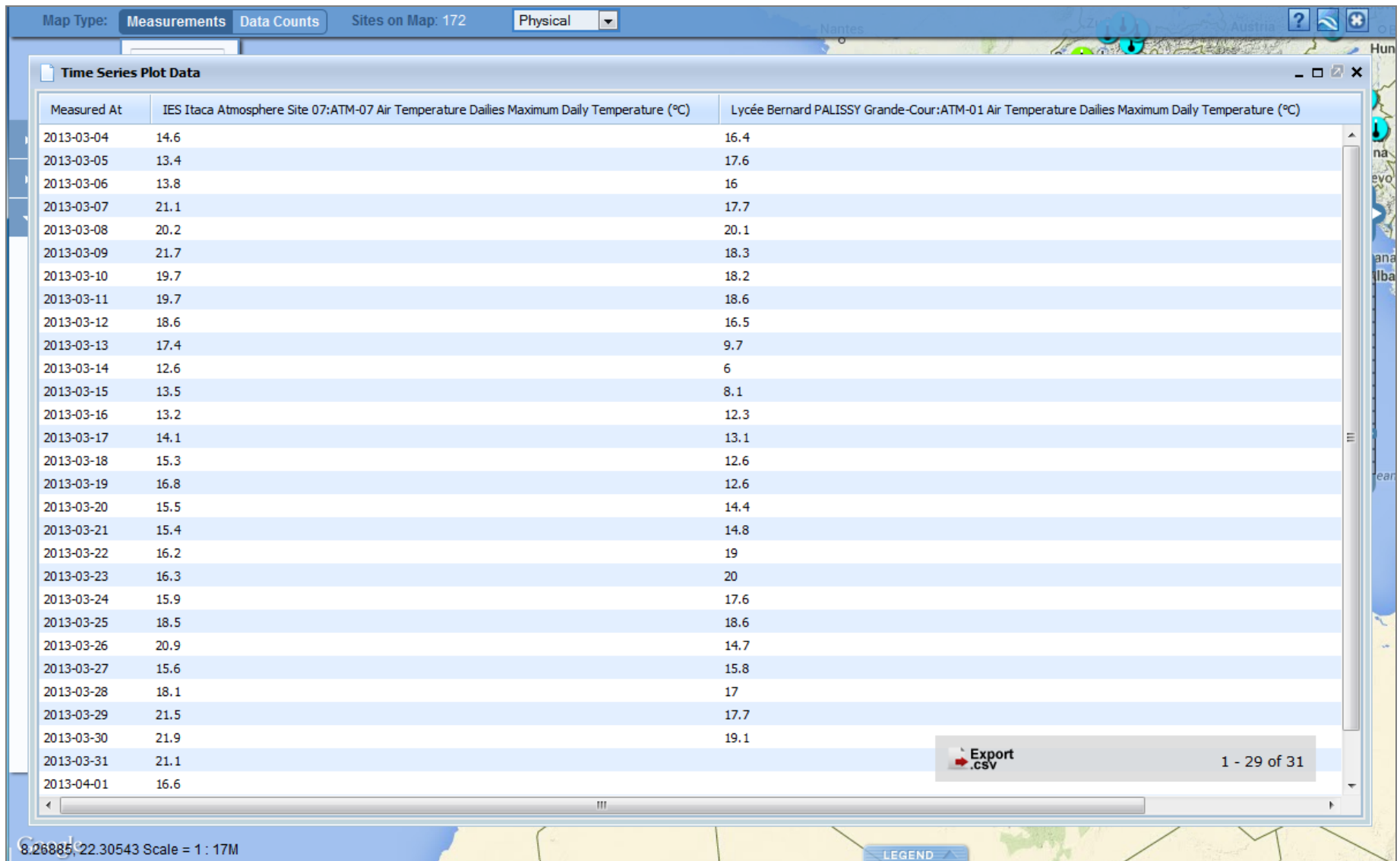
For optimum performance, the maximum recommended date range is 5 years

☒ Use Auto Y-axis

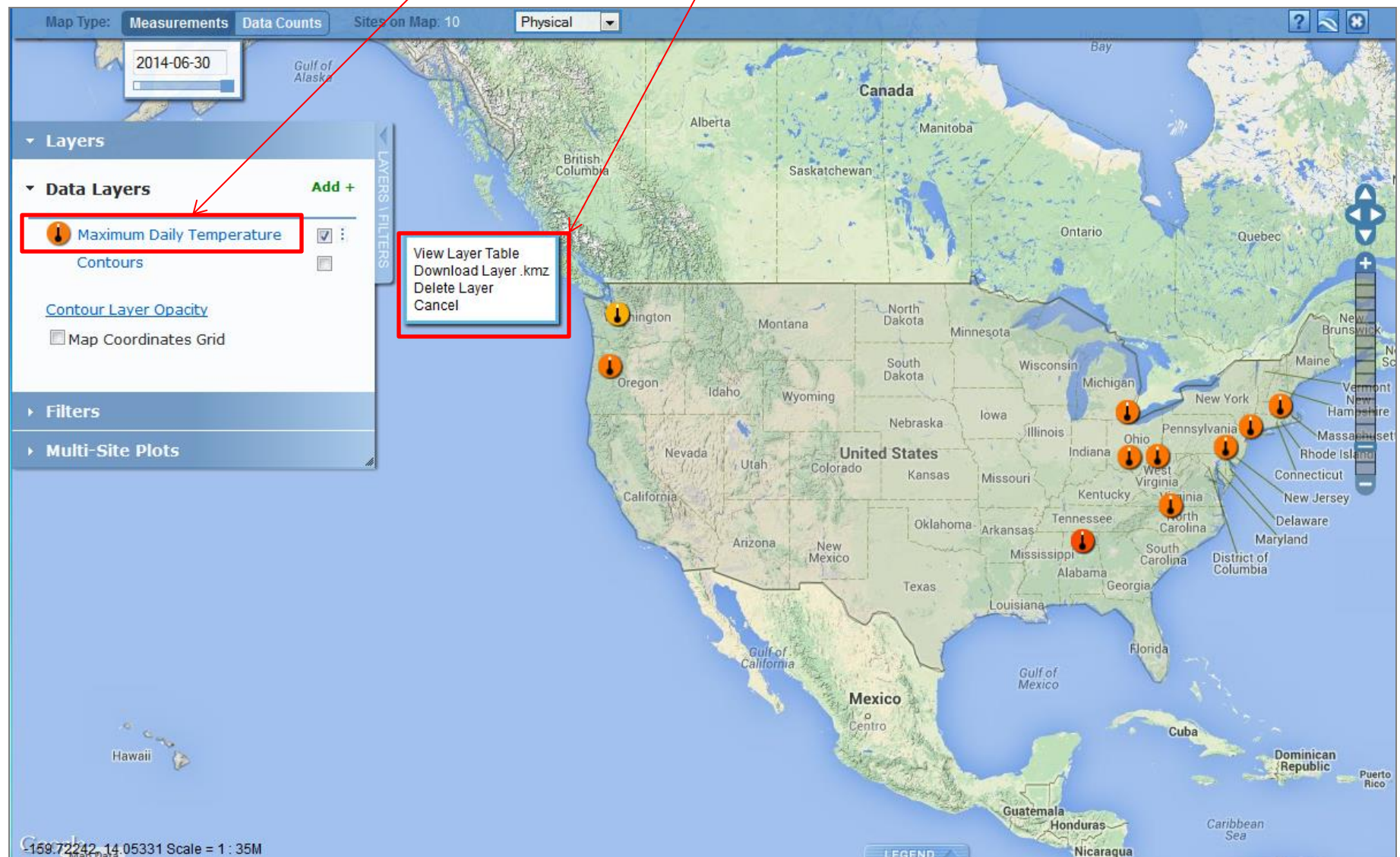
Plot All View Plot Data Clear List



Here is the data table showing the two sites.



Another way to output data is to view all data of a layer in a table. To do so, click on the layer name – A selection pop-up box appears. Click on **View Layer Table**. In this example we used the location filter to just show U.S. sites. Note – data can also be downloaded to a .kmz file



The sites in the U.S. for the layer and measurement date selected are listed in the table and can be sorted by any field name (School Name, Site Name, etc.) and can be exported to a .csv file.

Map Type: **Measurements** Data Counts Sites on Map: 66 Physical

2006.11.10

Maximum Daily Temperature Measurements

School Name	Site Name	Latitude	Longitude	Elevation
4. Zakladni Skola - Ekolog. Praktikum	School Location:ATM-01	50.4387	15.3523	868
Abd-Elmajeed Bin Abd-Alaziz Secondary School at Al-Madinah Al-Monawarah	ALI:ATM-01	24.2434	39.3141	666
Akmenes gimnazija	Akmenes Gimnazija:ATM-01	56.1456	22.4437	54.2
Al-Farouq intermediate School at Jeddah	ikea:ATM-01	21.3328	39.1106	12.9
Al-Masaudi School at Jeddah	AL-Masaudi School Jeddah:ATM-01	21	39	15.6
Anita Elementary School	Anita Weather Site (digital):ATM-03	41.2714	-94.4612	42
Anvil City Science Academy	School Location:ATM-01	64.5205	-165.421	102
Anyksciu A. Baranausko vidurine mokykla	temperatura:ATM-05	55.31104	25.05513	53.7
As-Siddiq Secondary School at Khamis Mushait	AL-SADEEQ:ATM-01	18.18	42.41	2014
Ban Suksamran School	Ban Suksamran school:ATM-01	9.34439	98.41913	61.5
Baruch College Campus High School	atm BCCHS at SC:ATM-01	40.73408	-73.9742	39.1
Berufskolleg Institut Dr. Flad	School Location:ATM-01	48.774	9.1543	271
Bibó István Gimnázium	MELYKUT:ATM-08	46.2155	19.3807	102
Bibó István Gimnázium	Solyom utca:ATM-04	46.42597	19.4775	86
Bibó István Gimnázium	Jokai utca:ATM-09	46.43888	19.47612	93
Bibó István Gimnázium	Vadkerti utca:ATM-20	46.4391	19.47785	89
Bibó István Gimnázium	Kossuth utca:ATM-06	46.43142	19.4852	90
Bibó István Gimnázium	ROSE:ATM-21	46.42833	19.47297	88
Bibó István Gimnázium	LAMP:ATM-01	46.4283	19.4733	89
Blackmore Weather Station	Weather Station:ATM-01	37.08904	-76.4223	44.3
Bocskai Istvan Gimnazium, Szakkepzo Iskola es Kollegium	87_AtmosphereSite87:ATM-01	47.1617	21.7045	92
Browning High School	Browning High School Atmospheric Site:ATM-01	48.5538	-113.0147	1353
Calera Elementary School	Calera Elementary Eagles:ATM-02	33.10719	-86.74942	211.8
Camp d'Aprenentatge de la Vall de Boí	ATM-02:ATM-02	42.5032	0.7987	1036.2
Casa Grande High School	Hatchery Yard:ATM-05	38.2443	-122.5983	44.5
CC Padre Manyanet	Caseta Metereologica:ATM-01	40.55298	-3.67716	698.9
CECYTEM Nezahualcoyotl I	PLANTEL NEZAHUALCOYOTL:ATM-01	19.4833	-99.05	2234
CEG1 Natitingou	School Location:ATM-01	10.2947	1.3808	432
CEG Adjohoun	Atmosphere Site 01:ATM-01	6.7	2.4833	55
CEG Bassila	Atmosphere Site 01:ATM-01	9.0021	1.4026	399.7
CEG Come	Atmosphere Site 01:ATM-01	6.2478	1.5225	69

Export .csv

1 - 33 of 428

167.43726, 4.34845 Scale = 1 : 35M

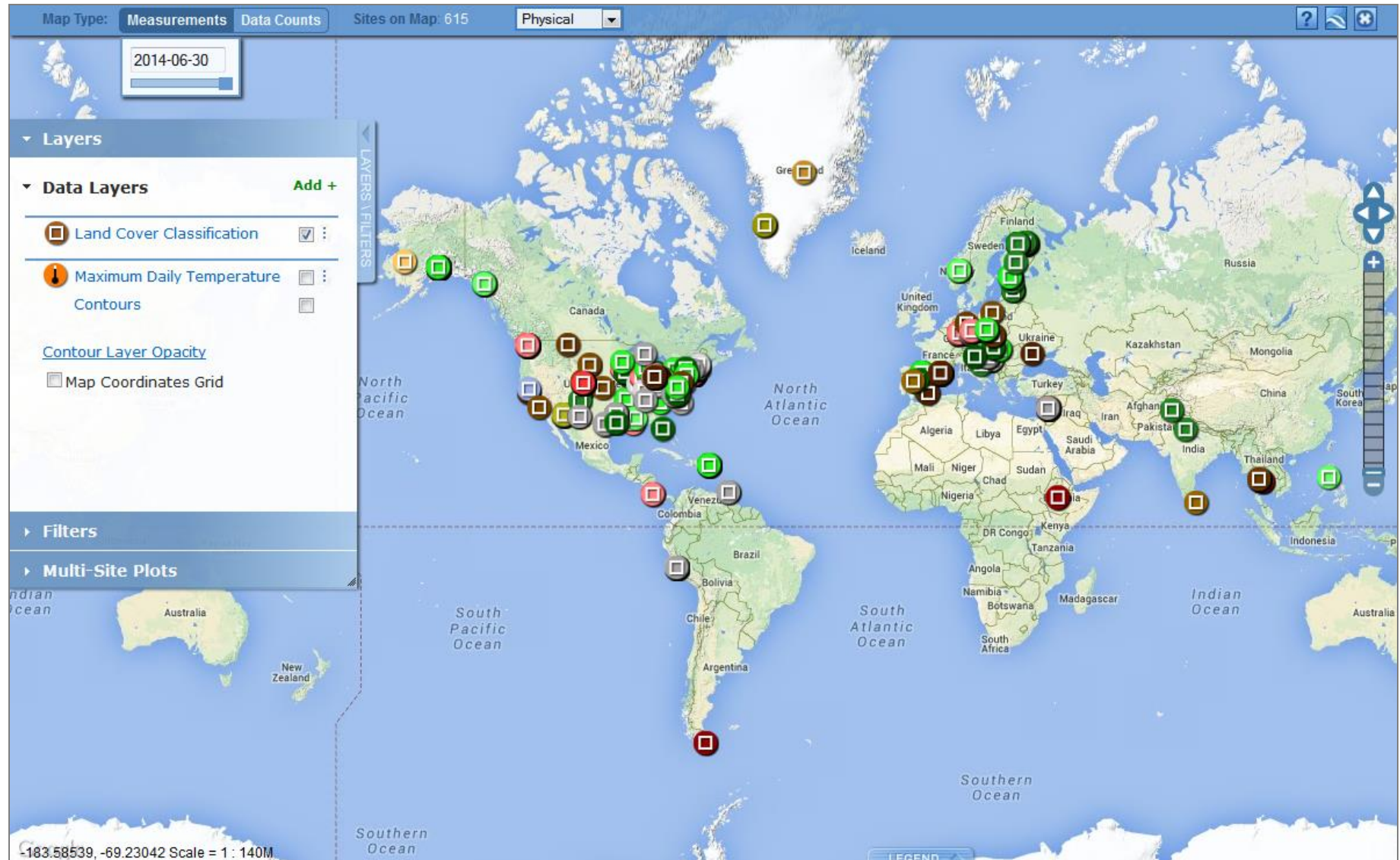
LEGEND

Venezuela

Guyana

French

Let's take a look at Land Cover Classification. Add the Land Cover Classification Layer. This map represents the entire history of GLOBE as land cover classification generally changes slowly. In this case, we are not describing the situation for a day or a week but building up of a global map. Turn off the Daily Temperature layer



Now, click on an icon. If the site has photos, scroll down to view the available photos.
Click on a photo to see a larger view.

The screenshot shows a web application interface for a global map. At the top, there's a navigation bar with 'Map Type: Measurements', 'Data Counts', and 'Sites on Map: 615'. A date selector shows '2014-06-30'. The map displays various colored icons (green, red, brown, yellow) representing different data points across the world. A pop-up window is open for a specific site, titled 'School: Munising High School' and 'Site: Football Practice Field:LCS-01'. The pop-up has tabs for 'Measurements', 'Data Counts', 'School Info', and 'Site Info'. Under the 'Measurements' tab, there's a section for 'Land Cover' with a dropdown menu showing 'Land Cover Classification (4)'. Below this, it displays 'Data Date Range: 2000-09-11 to 2000-09-11', 'Measured At: 2000-09-11', 'Land Cover Classification: 821', 'Muc Name: Cultivated Land, Non-Agriculture, Parks and Athletic Fields', 'Muc Category: 82', and 'Elevation: 195.9 m'. At the bottom of the pop-up, there's a section for 'Available Site Photos' with a dropdown menu showing '2000-09-11' and a 'Show' button. Below this, there's a photo of a football field with a goalpost and trees in the background. The map background shows the North Pacific Ocean, South Pacific Ocean, and Southern Ocean. The bottom left corner shows coordinates '199.05414, -79.14114' and 'Scale = 1 : 140M'. The bottom right corner has a 'LEGEND' button.

Map Type: Measurements Data Counts Sites on Map: 615 Physical

2014-06-30

Layers/Filters

North Pacific Ocean

South Pacific Ocean

Southern Ocean

School: Munising High School

Site: Football Practice Field:LCS-01

Measurements Data Counts School Info Site Info

Land Cover

Land Cover Classification (4)

Data Date Range: 2000-09-11 to 2000-09-11

Measured At: 2000-09-11

Land Cover Classification: 821

Muc Name: Cultivated Land, Non-Agriculture, Parks and Athletic Fields

Muc Category: 82

Elevation: 195.9 m

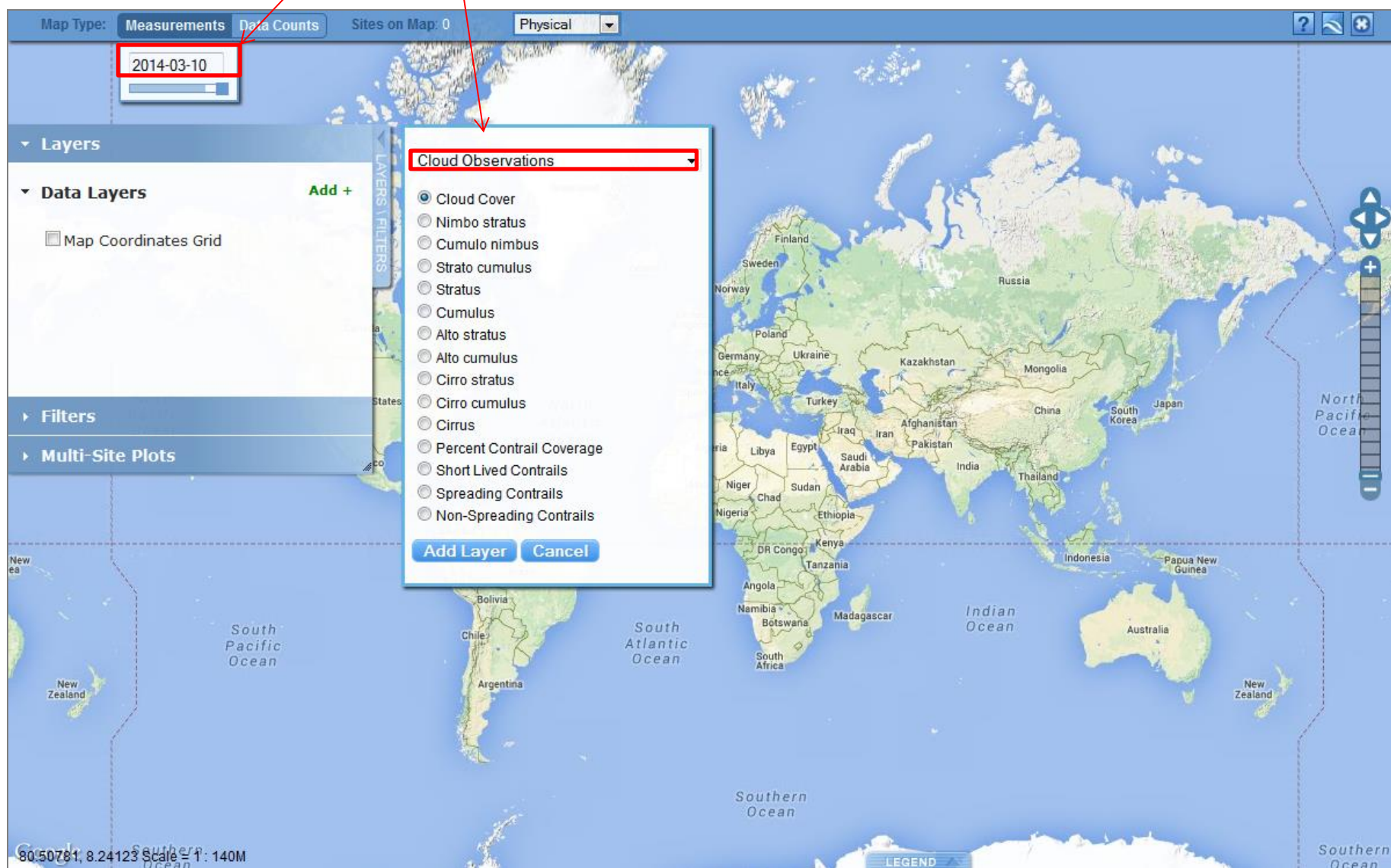
Available Site Photos: 2000-09-11 Show

N

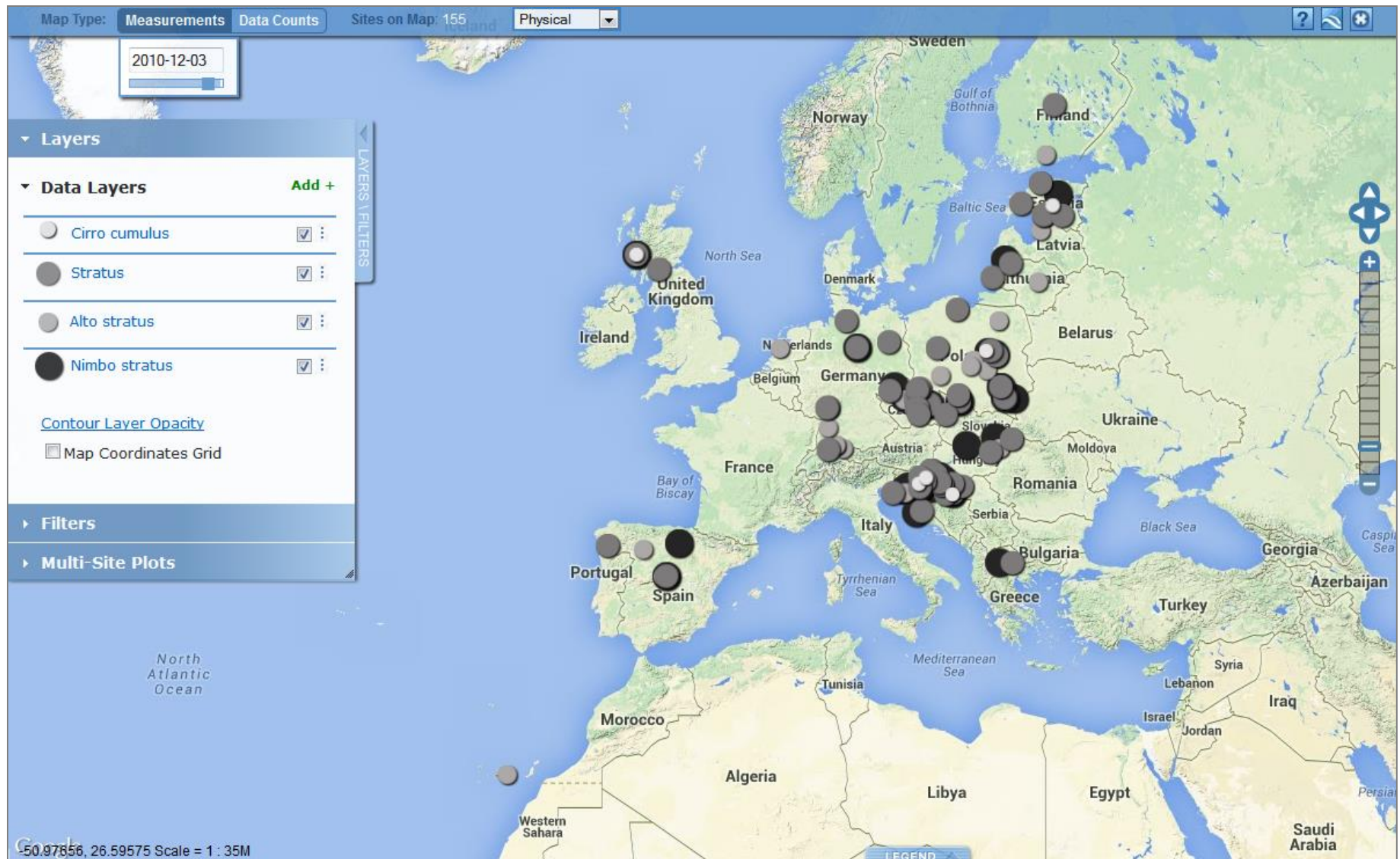
LEGEND

199.05414, -79.14114 Scale = 1 : 140M

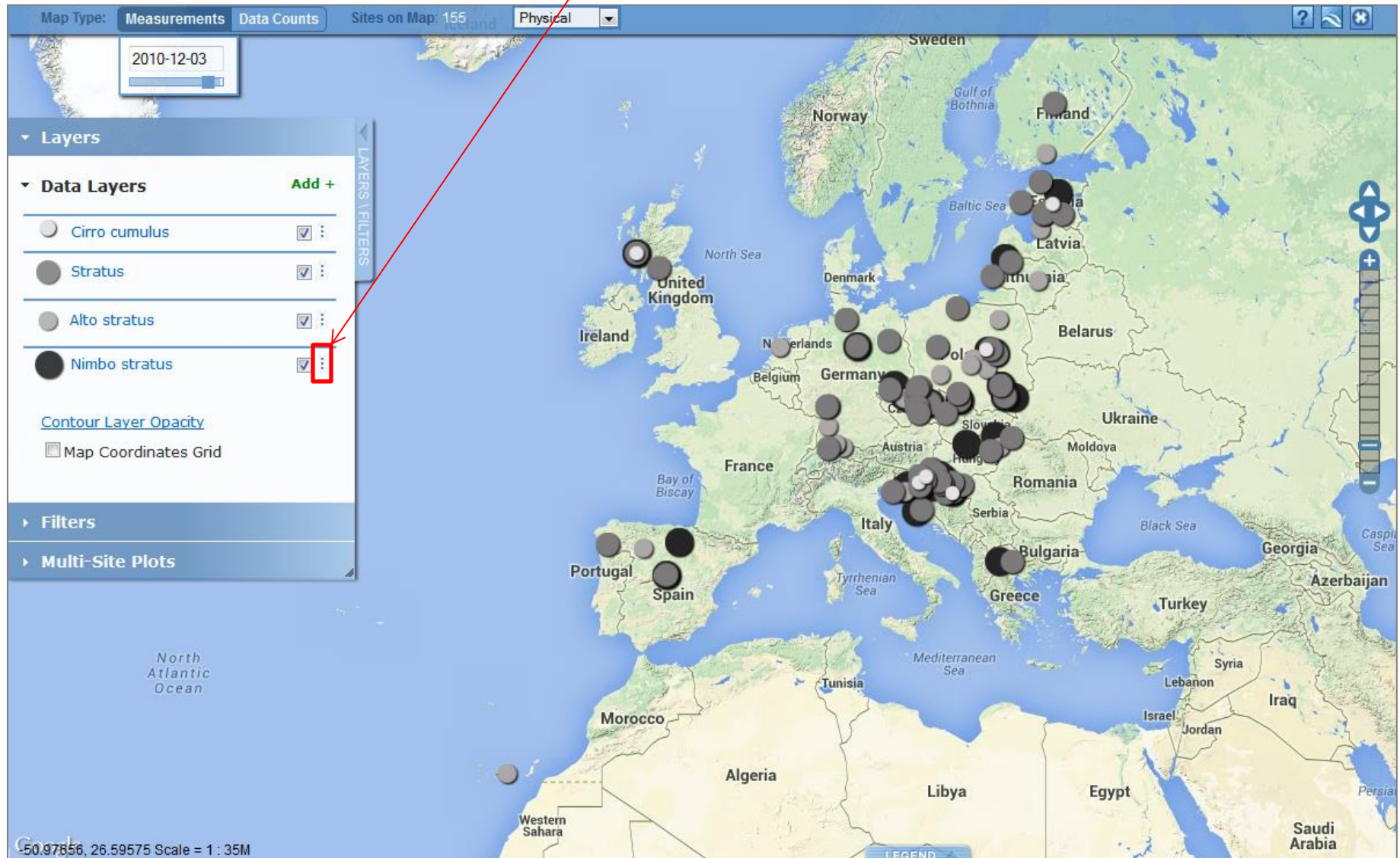
Layer Stacking/ Ordering – Add four Cloud Observation Layers – Cirrus Stratus, Alto Stratus, Stratus and Nimbo Stratus. Change the map date to Dec. 3rd 2010.



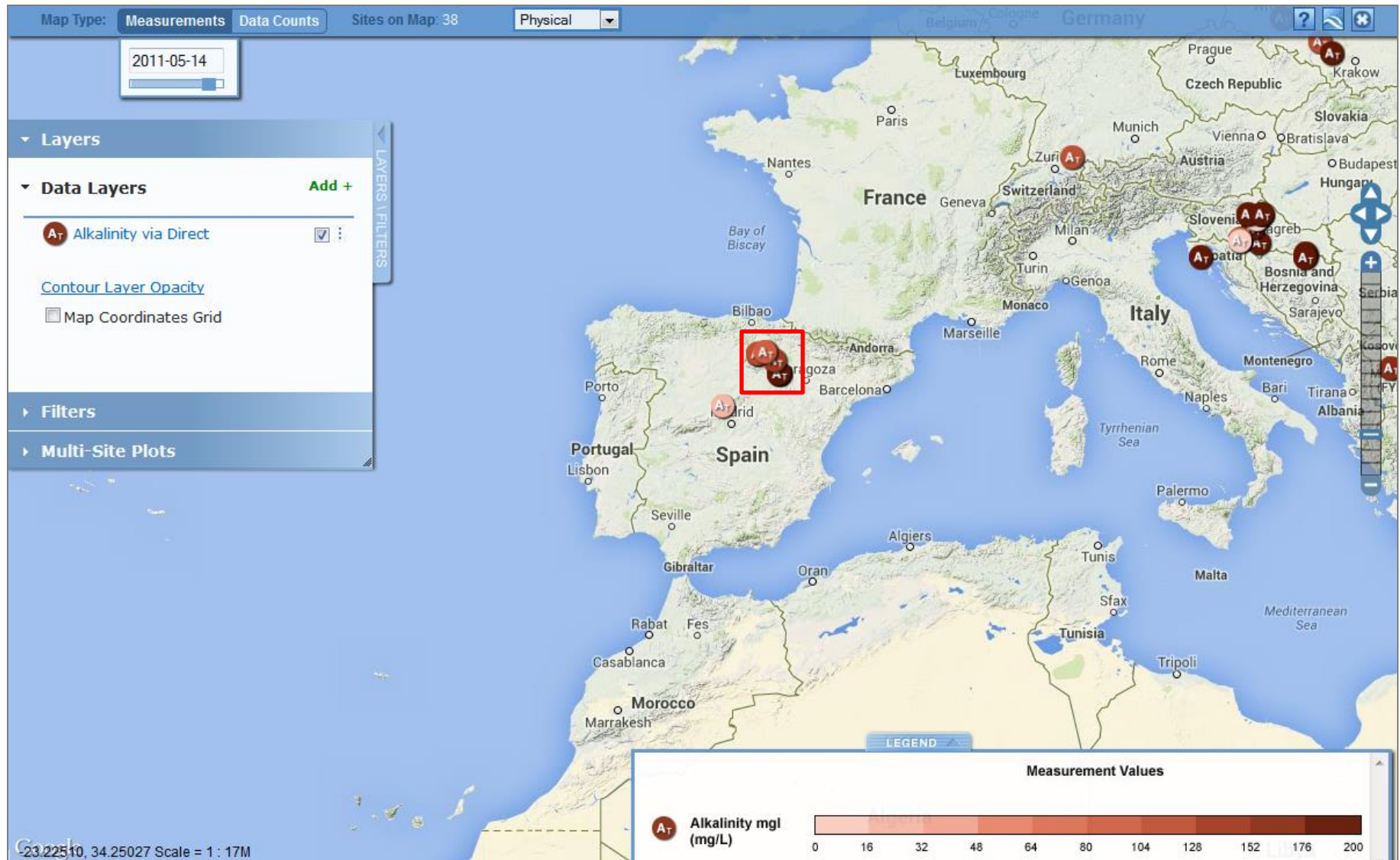
Cloud Observations and other measurement types (Soil Properties, etc.) utilizes different layer sizes and colors so one can see up to 5 layers at a single site. Since different Cloud Observations can be made at the same site on the same day, layer icons can be hidden.



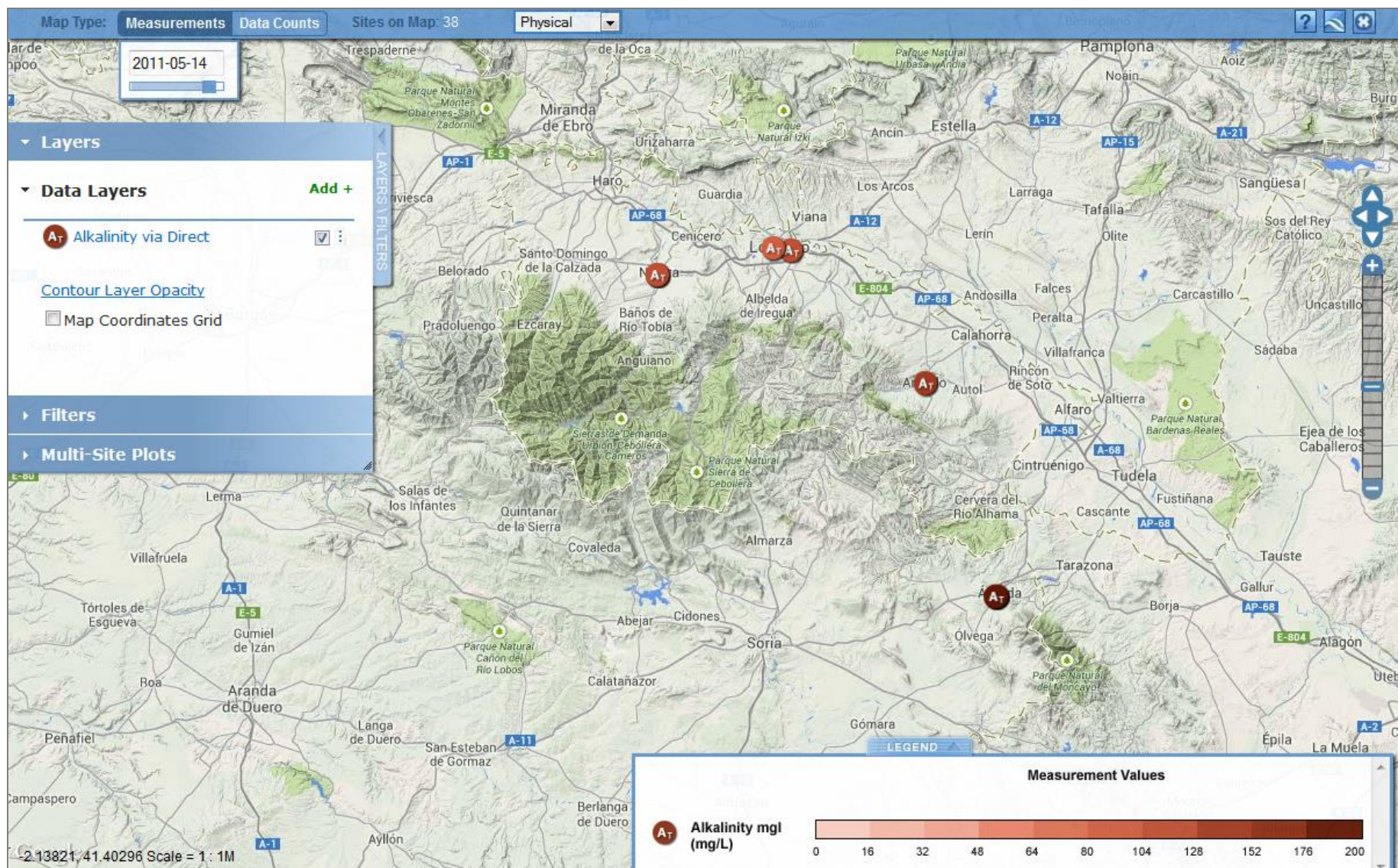
To re-order a layer, click and hold the small dots next to the add button. Now drag the layer to the new position



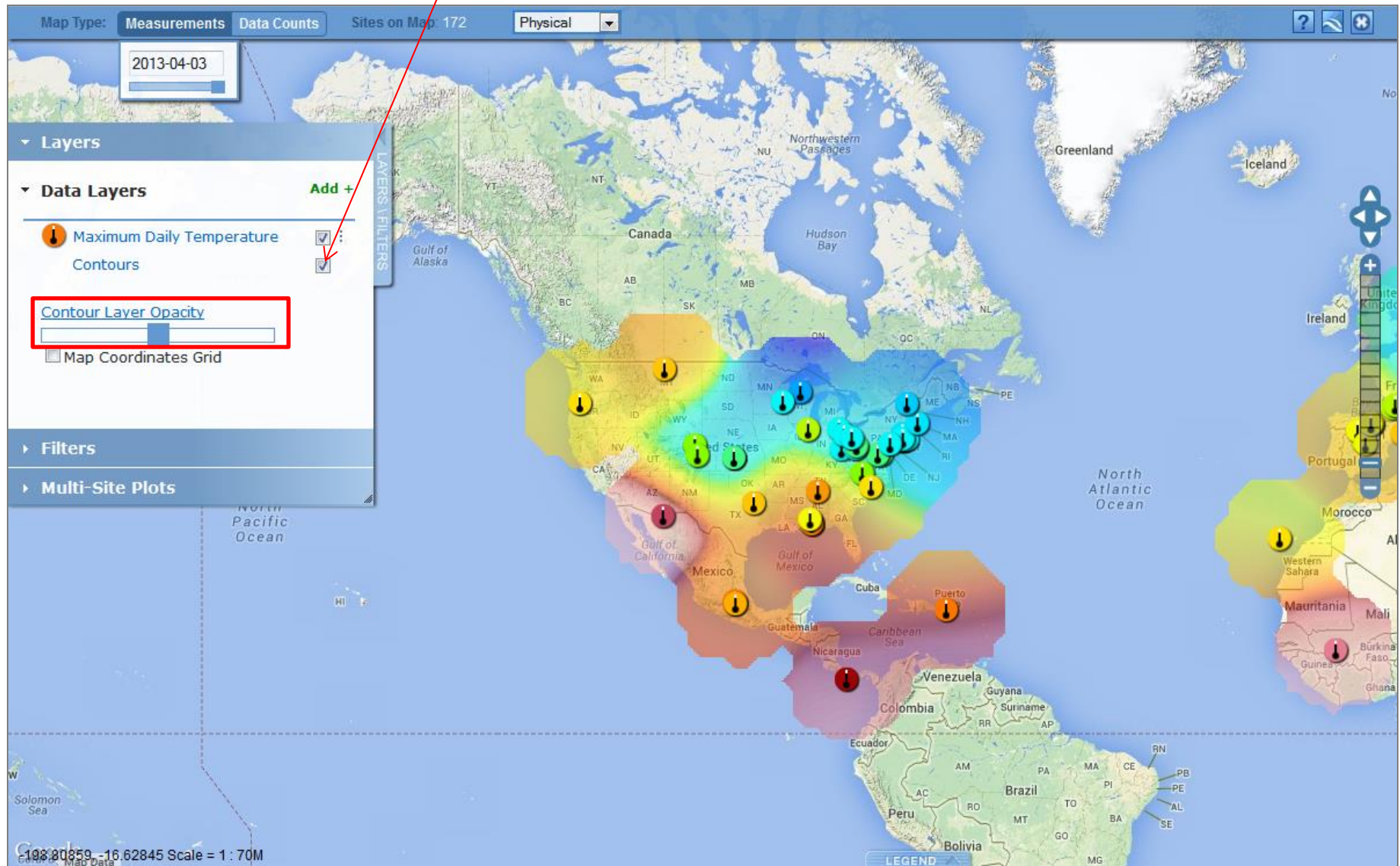
It's also important to realize that site icons may be hidden under other icons. If you are not seeing the correct site info window when you click on a site, try zooming in to make sure your site is not hidden. How many sites are in the square below?



Answer: Five



From the [Layers](#) Pop-Up box, contours of some data sets may be shown by clicking the [Contours](#) box. The contour opacity can be adjusted by clicking on the opacity link.



Your Assignment

1. On April 7, 2004, how many schools in the Czech Republic reported a water pH reading less than 5?
2. Which measurement technique did the school(s) use?
3. What was the range of pH values reported for this site in 2003 and 2004?
4. Pick one Czech school with a pH value less than 5 and another nearby school reporting water pH on April 7, 2004 and plot the data from the two schools for January to May 2004. What does the graph illustrate?
5. Which school in Poland has reported the most water pH data?
6. Plot water pH, conductivity, and alkalinity for this site for January to May 2004. What does this graph illustrate?



Answers

1. One (Filtered by Czech Republic using the place filter and date and then used the 'View Table Layer' tool).
2. Paper (Clicked on the site on the map, it's the lightest color icon. Value found in site info window).
3. 3 – 6 pH units in 2003, 3-6.5 in 2004 (Opened the site information window and clicked on the 'View data table' icon to view the data table. Then selected the data date range from Jan-Dec 2003 and then for 2004).
4. The pH level for the school with the higher pH level on April 7th on was consistently higher from Jan to May
5. [XI Liceum St. Konarskiego in Wrocław](#) (Filtered by Poland, switched to Data Counts map. It has the largest circle)
6. The pH remains fairly constant despite significant changes in alkalinity and conductivity (Added each dataset to the plot list by selecting each one in the site info window)

